IFC International Finance Corporation World Bank Group

GSMA Green Power for Mobile

In partnership with Netherlands

GPM Francophone Market Analysis: Opportunities & prospects

Green Power for Mobile
Francophone Regional Working Group

Dakar, 07-08 Nov 2013

Outline

- Francophone market Overview
- GPM Francophone Market Analysis – Senegal and Cameroon
- Green Power Adoption – Challenges and Opportunities
- Market Trends – Outsourcing

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Outline

Francophone market Overview

GPM Francophone Market Analysis – Senegal and Cameroon

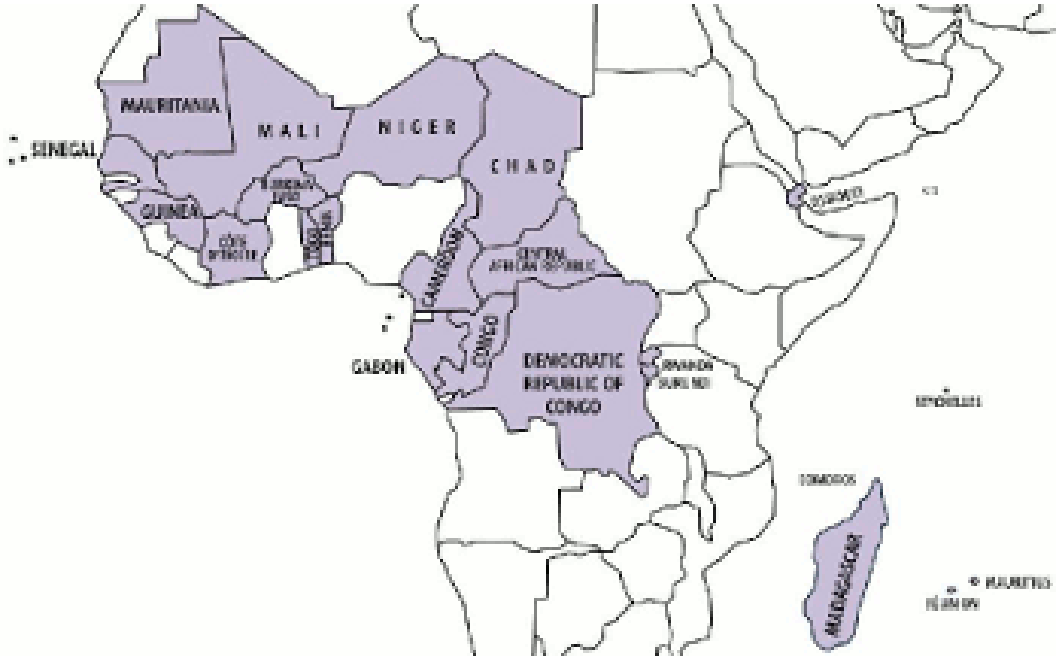
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Market Trends – Outsourcing

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Mobile market

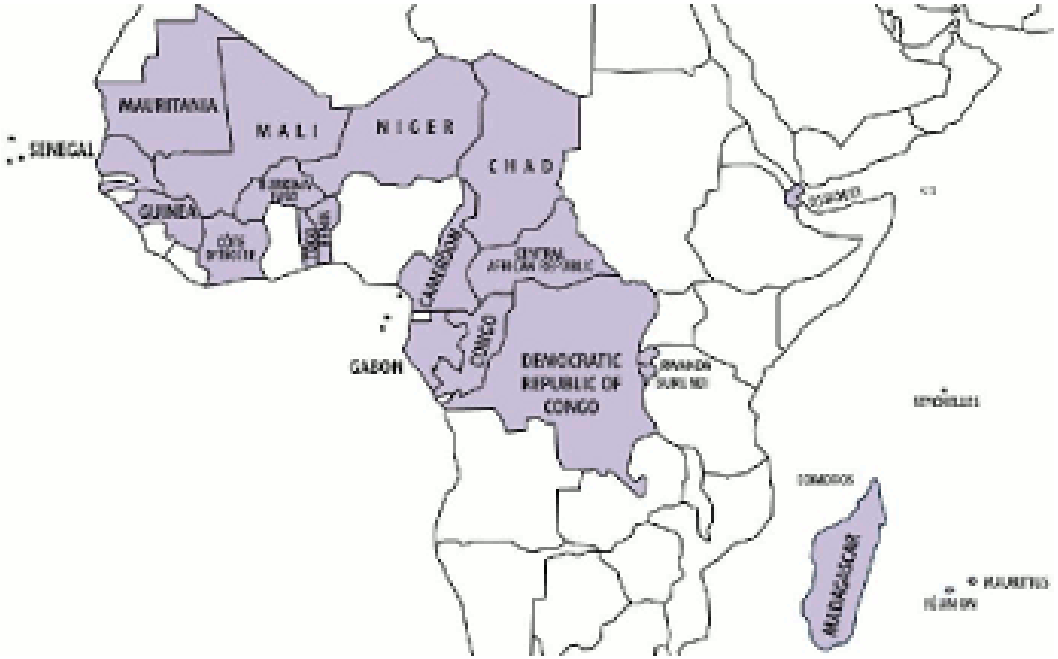
- Population: 260+ million
- Mobile connections: 121+ million
- Mobile penetration: 61%
  - Rural: 26%
  - Urban: 84%
- Mobile Coverage: 57%



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Infrastructure

- Electrification: 29%
  - Urban: 55%
  - Rural: 16%
- Total Telecom sites: 43,000+
  - Off-grid sites: 12,000+
  - Unreliable-grid sites: 18,500+
  - Reliable-grid sites: 12,500+
- Total addressable opportunity for green power: 30,000+ sites



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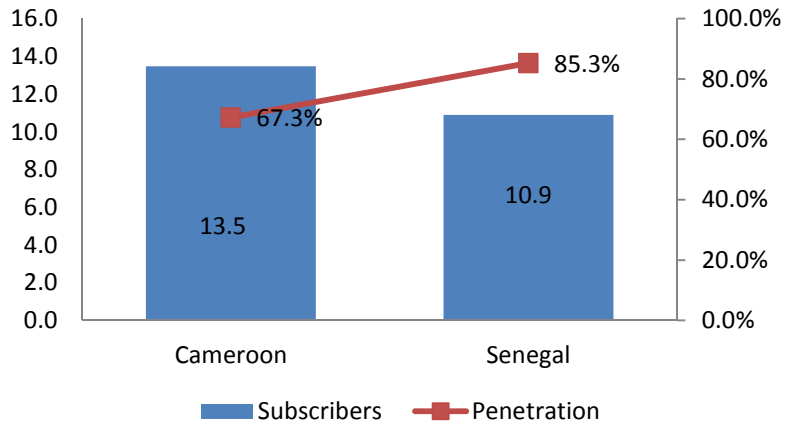
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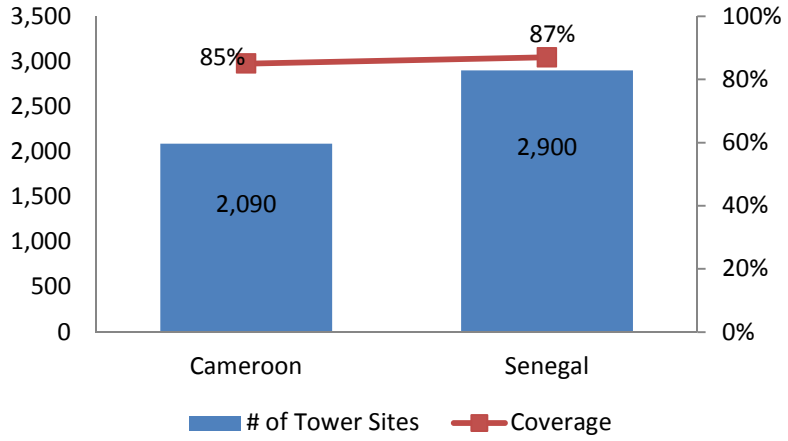
Telecoms Context: Subscribers and Network

Subscribers and Penetration



- Senegal and Cameroon have recorded a subscriber growth of 13.1% and 35.1% respectively between September 2011 and 2012.
- The penetration level has increased from 75.4% to 85.3% in Senegal and 49.8% to 67.3% in Cameroon.
- Low penetration levels present good opportunity for subscriber growth

Network and Coverage



- Mobile network coverage: 87% of the population in Senegal and 85% of the population in Cameroon
- Cameroon has tremendously improved its mobile network coverage from 58% in 2006 to 85% in 2012.
- The mobile network continues to grow in both Senegal and Cameroon driven by competition, capacity constraints and rural network expansion

Limited penetration and network coverage present opportunity for network expansion and growth

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Power Sector Context

Senegal

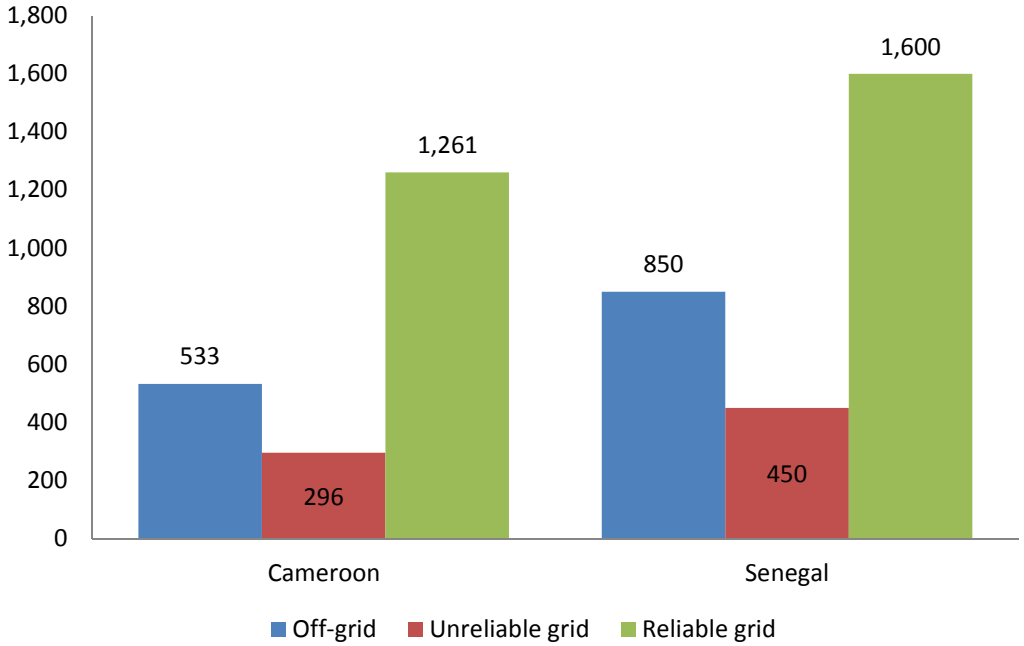
- Low density of the electricity grid
- Insufficient regulatory frameworks
- Over-reliance on imported fossil fuels to meet its energy demand
- Lack of diversification in energy generation mix

Cameroon

- Second greatest hydroelectric potential in Africa
- Insufficient electricity supplies
- Highly unreliable electricity supply
- Obsolete transmission and distribution networks
- Isolated transmission grids and no exchange of available surpluses – leads to the lack of resilience of the nation grid network

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Power challenges for Telecom Networks



- MNOs face infrastructure challenges to expand coverage to the uncovered remote/rural population
  - The reach of grid power infrastructure considered as the biggest hurdle to network expansion
  - Power infrastructure is crucial for Mobile Network operations and coverage growth
  - More reliance on diesel power due to poor quality and low availability of grid power supply to telecom sites
  - Grid extension to off-grid sites is expensive
  - The majority of the uncovered population are living in rural and remote off-grid areas

- Out of the total 5,000 sites in Senegal and Cameroon, nearly 28% are off-grid and 15% are unreliable grid sites

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Powering Scenario: Off-grid

	Cameroon	Senegal
24x7 DG	233	485
DG+Battery hybrid	118	150
Green Power	182	215
Total Off-grid	**533**	**850**
% of Green power	*34%*	*25%*
% of 24x7 DG	*44%*	*57%*

- The majority of off-grid sites (approx. 52%) are powered by 24x7 DG power solution
- More than 19% are deployed with DG-battery hybrid power systems.
- The share of green power deployments stands close to 29% of the total off-grid sites.

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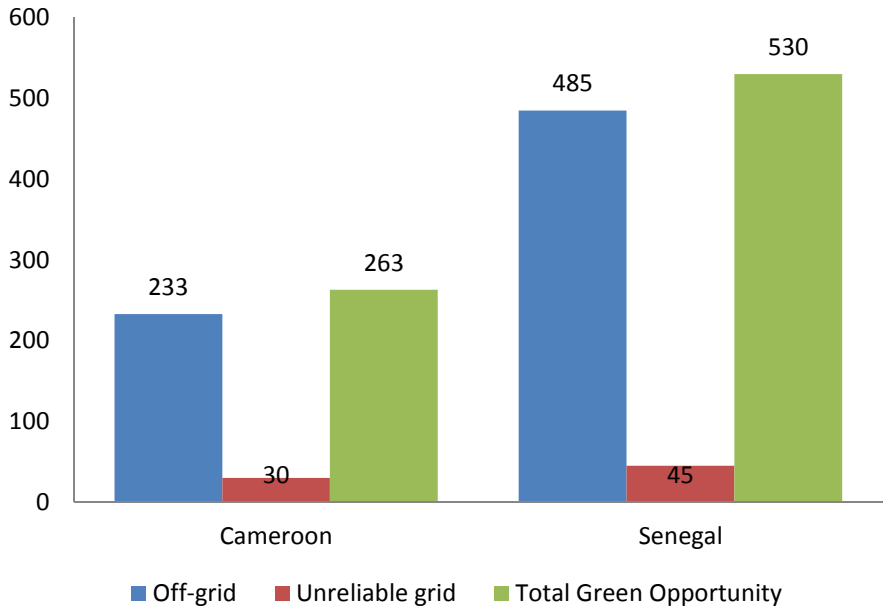
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The Green Opportunity



Potential sites	793
Investment required (million US $)	33
Potential OPEX Savings (million US $/year)	11
Reduction in diesel consumption (%)	67%

- Cameroon and Senegal combined present an opportunity of 793 sites for green power deployments.
- This constitutes10% of the total unreliable-grid sites plus 52% of the total off-grid sites.

- Potential OPEX savings of 11.4 million US$ per year
- Diesel consumption reduced by 67% from current levels

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The Green Opportunity: Challenges

Technology

- Availability and cost of technology
- Limited skills on technology selection and right solution dimensioning
- Technical support post deployment

Operational

- Reliability of technology and vendors
- Theft, vandalism of equipment
- Lack of committed support from partners at ground level

Financial

- Funding choices in addition to internal budgets
- Limited knowledge and support from commercial banks to finance green deployments
- Proven business models for off-loading the funding requirement

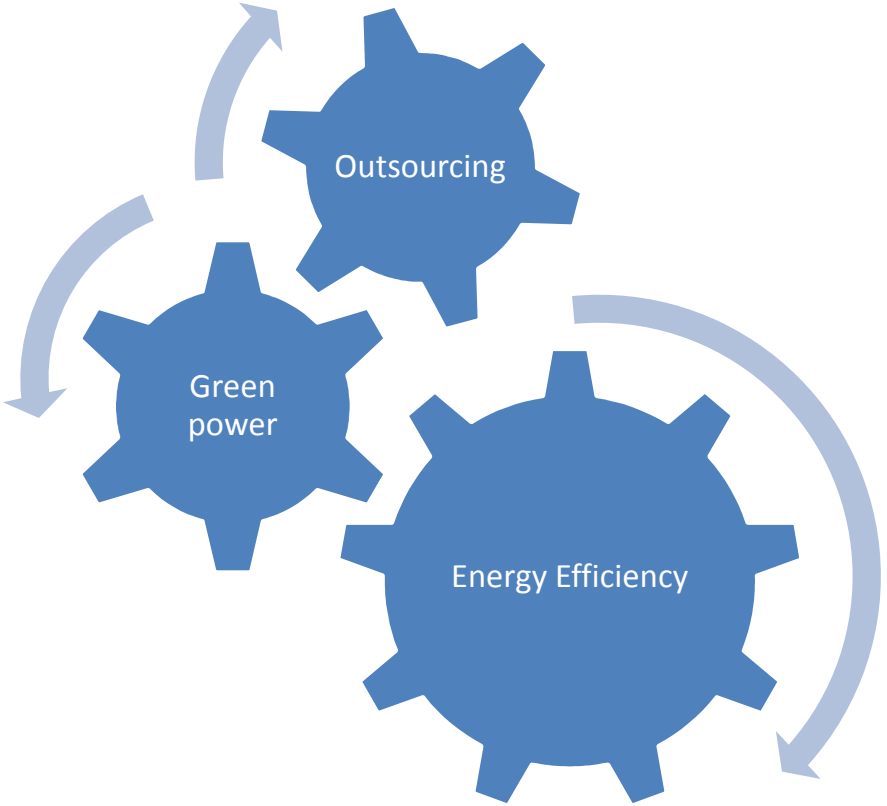
Eco-system

- Availability reliable operational partners and technology vendors
- Local knowledge and technical support
- Regulatory support and policy guidelines to drive the green adoption

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The Green Opportunity: Strategy

- Long term view on energy efficiency and green power investments
- Network energy efficiency to optimize network and future energy requirement
- Standardization power requirements based on site characteristics
- Analyse potential green choices and vendor landscape to support deployments
- Develop business case for financial feasibility and investment planning
- Understand available deployment models
- Clear procurement strategy to meet the energy needs of the network



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Industry Trends: outsourcing

Structural change: Tower outsourcing

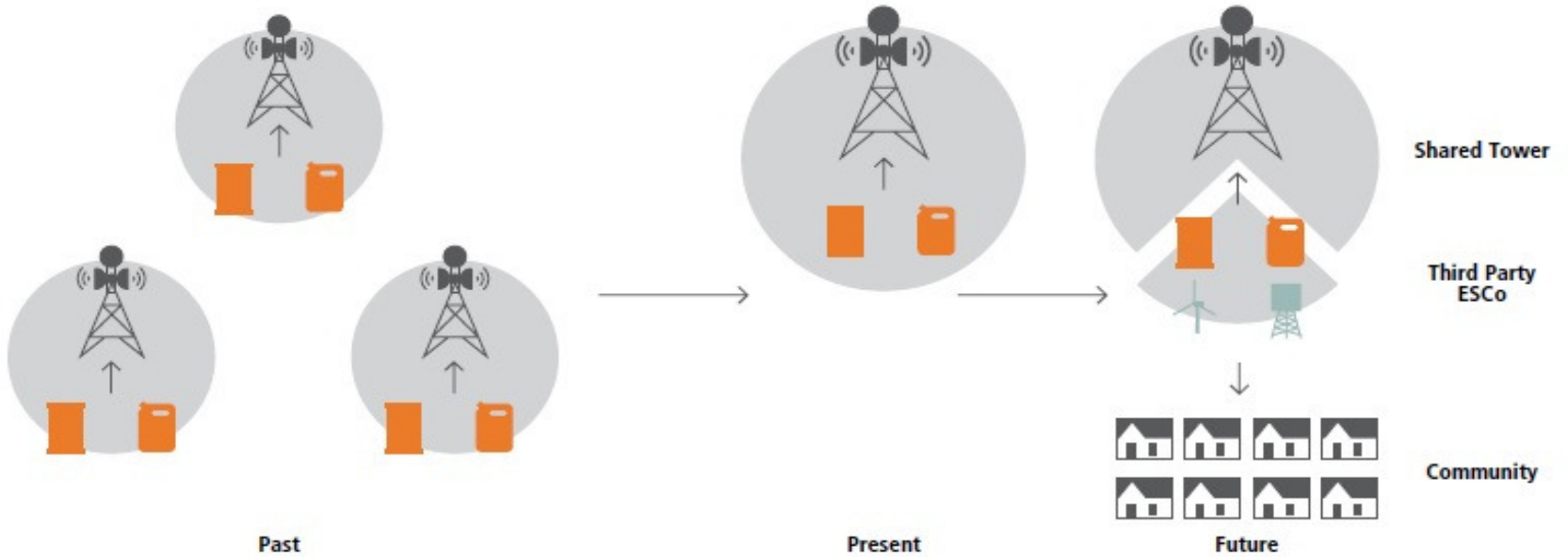
- In Cameroon, IHS Towers now owns and manages the tower assets of MTN and Orange, the two major MNOs in Cameroon
- In Senegal, has all its towers owned and managed by respective MNOs. Yet to see the entry of any major Africa focused Tower Companies.
- Tower sharing is expected to pick up in near future by expected expansion in network capacities and also, with expected entry of Cameroon's third GSM operator.

Supply Model Innovation: Emergence of Energy Service Company (ESCO)

- Completely own onsite power generation and supply of power to the base station sites thus reducing the burden of deploying and managing the power plant
- Energy outsourcing to drive adoption of green power
- Address the challenge of finance and operations for MNOs
- Business model and finance is key

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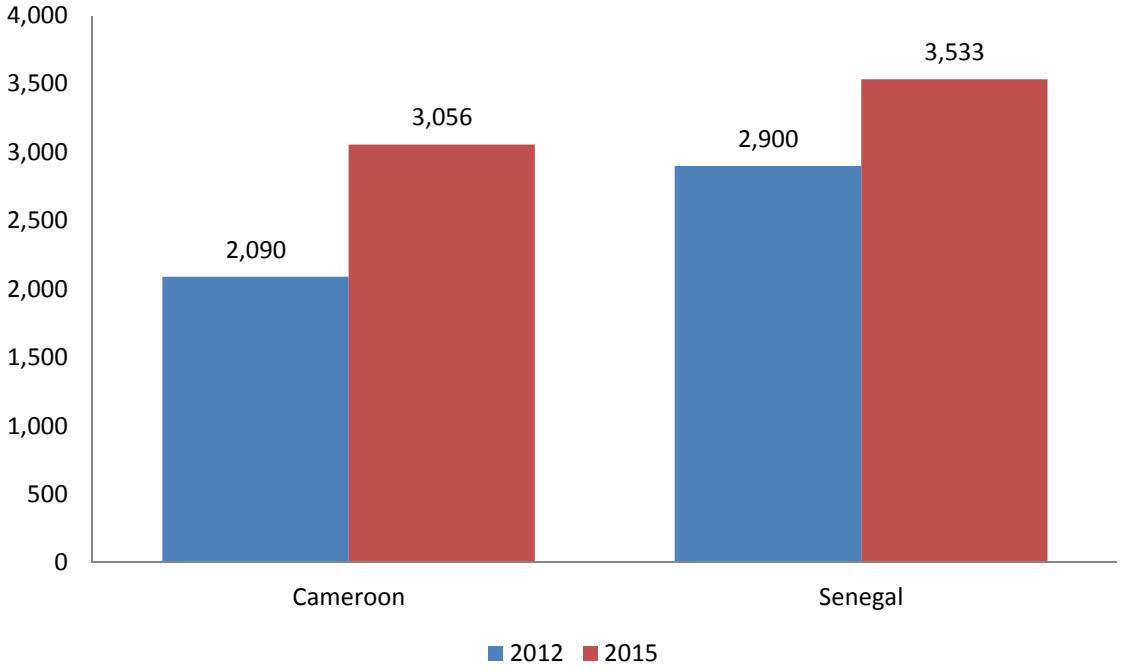
Energy outsourcing: opportunity



	Potential sites - 2012	Investment required – 2012 (million US $)	Revenue Potential – 2012 (million US $)	Additional Potential sites by 2015	Additional Investment required by 2015 (million US $)	Revenue Potential by 2015 (million US $)
Senegal and Cameroon	905	45	14	620	31	22

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Growth Forecast



- GPM estimates that the number of telecom sites will increase from 5,000 in 2012 to more than 6,500 by 2015 at a CAGR of 10% across the seven countries
- The estimate is based on current coverage levels, network capacity requirements, and demographic and geographic characteristics across countries
- New industry trends including tower sharing model will affect the rate of expansion of the network across countries

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References

1. GSMA-IFC Green Power for Mobile programme
2. Powering Telecoms: GPM Market Analysis – Francophone Africa

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Thank You!

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