



Source: Sunlabob

Off-grid RET rural electrification in Latin America - Focus on Peru, Bolivia and Colombia

7 October 2013, REN21 Webinar

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Secretary General

Agenda

- **Introduction to the Alliance for Rural Electrification**
- State and potential of off-grid RETs for rural electrification in Latin Am.
 - Peru
 - Bolivia
 - Colombia
- Stimulating private involvement - Challenges and suggested solutions

Introduction

- International business association promoting off-grid RETs solutions for rural electrification in developing and emerging countries
- Main purpose:
 - Knowledge-sharing platform
 - Enable business development
 - Facilitate public-private dialogue

3-year strategy – Annual Action Plans		
2013 Africa	2014 Latin America	
2° Sem.	1° Sem.	2° Sem.
Storage	Small hydro	Hybridisation



Source: Fortis Wind



Service lines

Public Affairs support

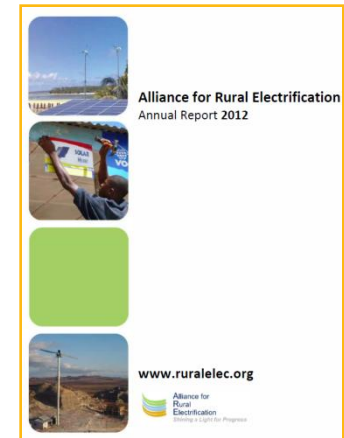
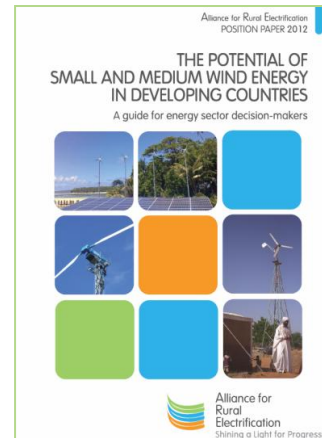
Awareness creation for nascent rural markets through advocacy, communications & marketing services: campaigns, newsletters, brochures, position papers, tool-kits, market studies.

Business & Intelligence Support

Business creation and development: representation at conferences, organisation of events (e.g. business delegations, workshops, webinars), project management, finance and procurement services.

Administration & Services

First-hand sector information, sharing competencies and best practices, membership management, project and meeting activities, individual requests.



Membership structure

- More than 70 members
- All kinds of actors:
 - Companies
 - Universities
 - NGOs
 - Public entities
- Present on all continents
- Covering all the RET value-chain



Vast network of partners

- International Organisations
- Sector platforms
- Media
- Local beneficiaries



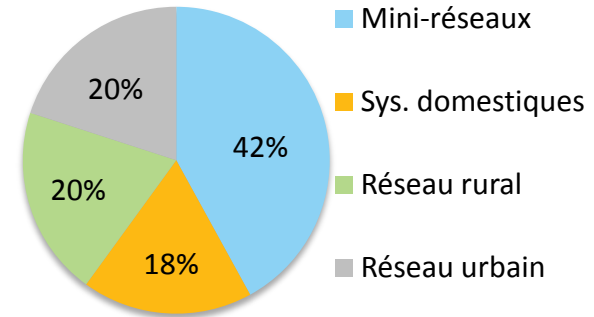
Why the focus on rural electrification?

- **Electricity fundamental** for socio-economic development (IEA, 2011)
 - 1,3 billion people un-electrified, most of them in rural Africa and Asia
 - 1 additional billion is under-electrified
- **Positive 2030 outlook** for off-grid clean rural electrification
 - 60% of new 952 TWh generation capacity to achieve universal access to electricity will be off-grid (UNF, EAPN, 2012)
 - Off-grid RET business models ready to be upscaled and replicated
- **Positive RET financing climate to continue** in developing countries
 - 2012: \$112 bn out of \$244 bn RET investment took place in the South with a focus on developing countries (sources: UNEP/FS/REN21).
- **Promising political momentum** as shown by post-2015 SDG agenda and numerous country electrification programmes.

Why off-grid RETs?

- **Grid extension** often unfeasible due to:
 - Low demographic density
 - Difficult access
- **Isolated diesel sys** less attractive
 - High costs of transport
 - Fluctuating int. fuel prices
- **Off-grid RETs:** cost-eff., flexible & reliable
 - **Individual systems:**
 - Isolated households
 - Basic services
 - **Mini-grids:**
 - Isolated villages
 - Advanced services

Additional capacity to achieve universal access to elec by 2030: 952 TWh



Source: June 2012, UN Foundation

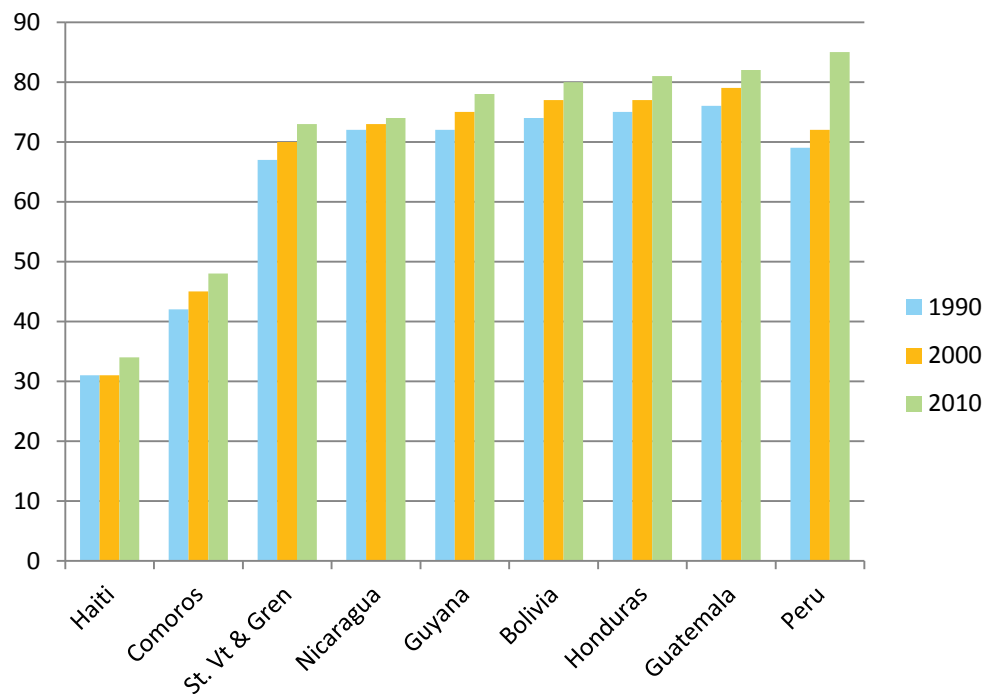
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Electrification rates in LAC

Indicator	Figure
Pop. un-electrified in LAC	6% of total pop
Pop. un-electrified in rural LAC	28% of total rural pop

Source: REN21, GSR, 2013

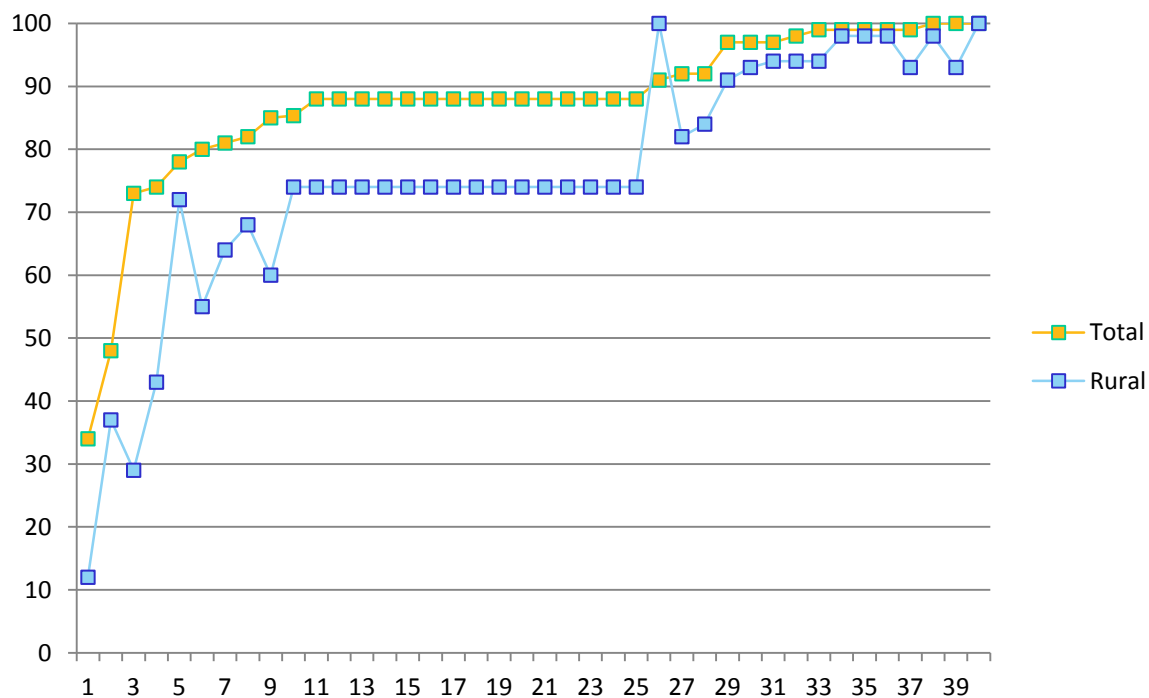


Country	Trends in elec ^o rates		
	1990	2000	2010
Haiti	31	31	34
Comoros	42	45	48
St Vt & Gren	67	70	73
Nicaragua	72	73	74
Guyana	72	75	78
Bolivia	74	77	80
Honduras	75	77	81
Guatemala	76	79	82
Peru	69	72	85

Source: Global Tracking Framework, 2013

Rural elec^o rates in selected LAC countries

Total and Rural electrification rates in 40 LAC countries (2010)



Data extracted from 2013 Global Tracking Framework

Country		Elec ^o rates	
		Total	Rural
1	Haiti	34	12
2	Comoros	48	37
3	St Vt & Gren	73	29
4	Nicaragua	74	43
5	Guyana	78	72
6	Bolivia	80	55
7	Honduras	81	64
8	Guatemala	82	68
9	Peru	85	60
10	Average	85	74
27	Colombia	97	91

Peru

- **State of rural electrification**
 - Rural electrification rate ~60% (9th lowest rate in LAC)
 - About 1,462,783 un-electrified households
 - 13,345 of off-grid and 3,373 on-grid SHS (Case study of AMP)
 - High wind potential in mountains and coast.
 - There is also hydro and biomass potential
- **Policy Framework**
 - Target 96% by 2020
 - National Rural Electrification plan 2011-2020
 - Two funds: FOSE - cross-subsidy & FONCODES - rural dev. inc. RETs
 - Main executive body: National Rural Electrification Office (DGER)
 - *Also specific legislation incentivising RETs development*



Bolivia

- **State of rural electrification**
 - Rural electrification rate ~55% (6th lowest rate in LAC)
 - About 515,815 un-electrified rural households
 - PV and hydro potential
- **Policy Framework**
 - Target 70% by 2015 – 87% by 2020 – 100% by 2025
 - Law for Universal Access to Electricity 2006
 - Rural electrification Decree 2005
 - Fund: FOCO – linked to the law on universal access to elec.
 - Main body: Viceministry of Electricity and Alternative Energy



Colombia

- **State of rural electrification**

- Rural electrification rate 91% (27th lowest rate in LAC)
- About 127,343 un-electrified rural households
- Non-Interconnected Zones: 23% of total territory - 2.3 m. people
- Installed Small hydro: 519 MW
- Installed SHS : 78,000 SHS
- High wind potential

- **Policy Framework**

- Target: 20% by 2015 & 30% by 2020 of off-grid elec. gen^o from RETs
- Main body: Institute for the Investigation and Application of Energy Solutions (IPSE)
- Funds: FANZI – off-grid zones and FAER – rural areas



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Barriers and suggested solutions

Challenges	Solutions
Lack of institutional and political will	Stability, long-term master plan and commitment towards RE and access to energy
Inadequate legal and regulatory framework	Simplification, standardisation (licensing, PPAs, authorisation, access to market etc.)
Public support schemes	One-off for capital investment and/or on-going. Cross-subsidy/ REFiTs / Phase out fuel subsidies.
Access to finance	Credit schemes, guarantees for the banking sectors
Lack of information and need for capacity-building on technical, business, financing.	From simple end-user education to building entrepreneurial skills and technical trainings.
Need for an integrated approach	Creation of synergies water, food, telecom sectors



ARE LAC business-oriented activities

- 1st semester 2014: Campaign on Small Hydro (with a focus on LAC)
 - Established an internal Taskforce
 - Creation of a technology position paper
 - Attendance of a UNIDO SHP workshop in Brasil (pre-warming)
- Market briefs for several countries (Peru, Bolivia, Colombia)
 - Established a partnership with Berkeley Rural Energy Group
 - First drafts have already been prepared
- Event organisation
 - Exploring possible target countries for business delegations
 - Evaluating the organisation of a large scale event
- Local actors:
 - Establishing an MoU with Plataforma Latinoamericana de Energia Sostenible y Equidad - PLESE
 - Supporting the Mancomunidad Trinacional Fronteriza Río Lempa in its intervention on rural electrification.



Thanks you very much for your attention

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