Regional Centre for Renewable Energy and Energy Efficiency
Centre Régional pour les Energies Renouvelables et l'Efficacité Energétique
Centro Regional para Energias Renováveis e Eficiência Energética
www.ecreee.org

ECOWAS RE INVESTMENT INITIATIVE (EREI)
PRESENTATION

THURSDAY, 27TH SEPTEMBER 2012
DAKAR, SENEGAL

THE ECOWAS REGION

- *15 COUNTRIES WITH A LAND AREA OF 5 MILLION M²*
- *CLIMATE FROM SEMI-ARID TO HUMID TROPICAL*
- *POPULATION OF WITH 300 MILLION PEOPLE,*
- *60% OF POPULATION LIVES IN RURAL AREAS*
- *11 OF THE 15 COUNTRIES ARE LDCS AND HIPIC*
- *ALMOST 150 MILLION PEOPLE HAVE NO ACCESS TO ELECTRICITY*

Energy Situation in West Africa

- **Interrelated challenges of energy poverty, energy security and climate change mitigation and adaptation**

- **Low Access to modern energy service**
  - One of the lowest energy consumption rates in the world;
  - The poor spend more of their income on low quality energy services;
  - Rural areas rely mainly on traditional biomass to meet their energy requirements;
  - **Household access to electricity services is only around 20% (40% in urban and 6-8% in rural areas);**

- **Energy security concerns**
  - High vulnerability to fossil fuel price volatility (60 % of electricity generation from oil)
  - Gap between rising urban energy demand, available generation capacities and limited investment capital;
  - High losses in the energy systems (e.g. high energy intensity and low demand and supply side efficiency);

- **Climate changes concerns**
  - Increasing energy related GHG emissions (new investments determine GHGs for the next 20 -30 years)
  - Climate change impacts vulnerable West African energy systems (e.g. water flows, extreme weather events)

RE & EE POTENTIALS IN WEST AFRICA

- **RE & EE play an important role in simultaneously addressing the energy challenges in West Africa**

- **RE potentials so far unexploited**
  - 23,000 MW of feasible **large and small hydropower potential** (16% exploited);
  - Huge potential for **all forms of bioenergy** (e.g. biomass, biogas, biofuel);
  - Average **solar radiation of 5-6 kW**h/m2 per day throughout the year;
  - Considerable **wind power potential** in some countries;
  - RETs are particularly effective in combination with EE measures;

- **EE potentials so far unexploited**
  - Wide range of options to improve **supply and demand side efficiency** (including energy saving)
  - e.g. **Equipment labeling and building standards**;
  - e.g. **Cleaner production** in industry (e.g. process heat);
  - e.g. **Technical and commercial losses** in the electricty system;

Constraints/ barriers

- **Financial/Economics:**
- High upfront costs of solar or wind compared with smaller scale conventional systems even where competitive;
- Lack of large scale projects at regional level to take advantage of higher solar or wind resource endowments and economies of scale;
- Lack of innovative financing mechanisms.
- **Policies and Institutional issues:**
- Absence of political targets for renewable energy in general and solar/wind in particular, in many countries;
- Non-existent or weak policy measures for level playing field in many countries;
- Weak national agencies with unclear responsibility for solar/wind in many countries.
- **Capacity Building & Technology transfer**
- Inadequate skilled technical manpower in many countries.
- Limited or no local manufacturing due to small national markets.
- Limited R&D with little or no linkages to entrepreneurial/ manufacturing sector.

Enabling Factors - Emerging RE&EE Policies in ECOWAS

Cape Verde

- Target of 50% of RE penetration by 2020 (mainly wind and solar).
- Approval of Law to promote RE in the country.

Ghana

- Target of 10% of RE penetration by 2015
- Renewble Energy Law approved (currently design of feed in tariffs)

Senegal

- Target of 15% of RE penetration by 2020
- Approved a Law to promote RE in the country. Under elaboration several regulations on this regard

ECOWAS

- ECOWAS White Paper for Peri-Urban and Rural Areas
- Establishment of ECREEE in 2010

Enabling Factors: First RE &EE Projects implemented

RE Projects completed in 2010

2.5 MW Solar PV, in Sal, Cape Verde
Commissioned October 1, 2010

5 MW Solar PV, in Praia, Cape Verde
Commissioned November 2, 2010

Enabling Factors: First RE &EE Projects implemented

RE Projects completed in 2011

10 MW Wind Farm, in Santiago, Cape Verde
Commissioned November, 2011

6 MW Wind Farm, in Sao Vicente, Cape Verde
Commissioned November, 2011

25,5 MW of Wind Power
Cabeólica – PPP between AFC, Finnfund, InfraCo, Electra and the National Government of Cape Verde

8 MW Wind Farm, in Sal, Cape Verde

2.5 MW Wind Farm, in Boavista, Cape Verde

Enabling factors: First RE &EE Projects implemented

SPEC-SOLAR

First manufacturing plant of PV panels assembly in ECOWAS. Dakar (Senegal)

25 MW PV module production, in Dakar, Senegal July, 2011

ECREEE's Strategy

"SOFT ACTIVITIES" TO ENABLE HARDWARE

Strategic Chain

Outputs

Awareness and Capacity Building	Support for Policy Development	Knowledge Management and Project Support	Investment Promotion and Advocacy
• Short-term training • Long-term training • Regional seminars • Advocacy • Publicity • Energy audits • Program activities	• Analytical support • Conferences • Policy dialogue • Short-term training • Demonstrations • Programs • Seminars • Study tours • Exhibits	• Databases • Resource maps • Research • Policy evaluation • Project evaluation • Communications • Publicity • EREF grants	• Conferences • Exhibits • Policy dialogue • Project preparation • Financing • Market analysis • Communications • Advocacy • Publicity

RE&EE Policy Framework

- ECOWAS Renewable Energy Policy and Energy Efficiency Policy developed
- To be adopted at High-Level Forum, 29-31 Oct 2012, in Accra
- Policy scenarios target SE4ALL in ECOWAS by 2030
- Preparation of national RE&EE action plans in 2013
- Execution of regional action plan by ECREEE
- Strong SE4ALL support needed

2010	2011	2012	2013	2014	2016
Preparatory Activities (fund raising, tender)		Adoption of RE & EE Policies by ECOWAS Ministers	RE National Action Plans EE National Action Plans Regional Action Plan		Follow-up and impact evaluation

2012 INTERNATIONAL YEAR OF SUSTAINABLE ENERGY FOR ALL

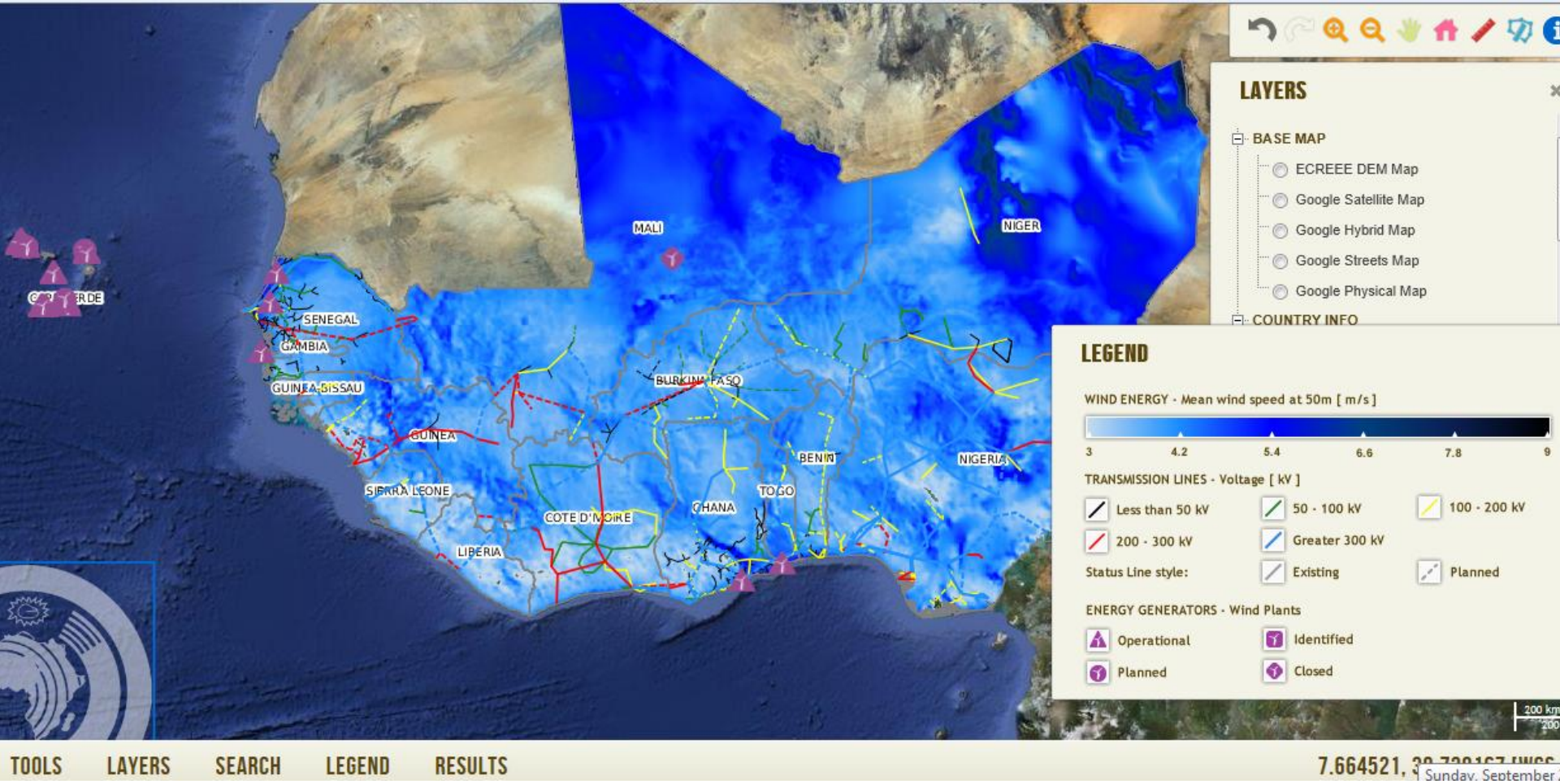
ECOWAS RE Policy Targets by 2020/2030

Grid-Connected RE Targets	2020	2030
RE share in toal ECOWAS generation capacity (incl. large hydro)	35%	48%
RE share in total ECOWAS generation capacity (excl. large hydro)	10% 2.425 MW	19% 7.606 MW

Rural RE Targets	2020	2030
Rural population supplied by mini-grids and stand-alone systems	22%	25%
Mini-Grids to be installed	60,000 3,600 MW	128,000 7,680 MW
Rural population served with improved stoves	100%	100%
Rural pupulation with access to LPG	17%	32%

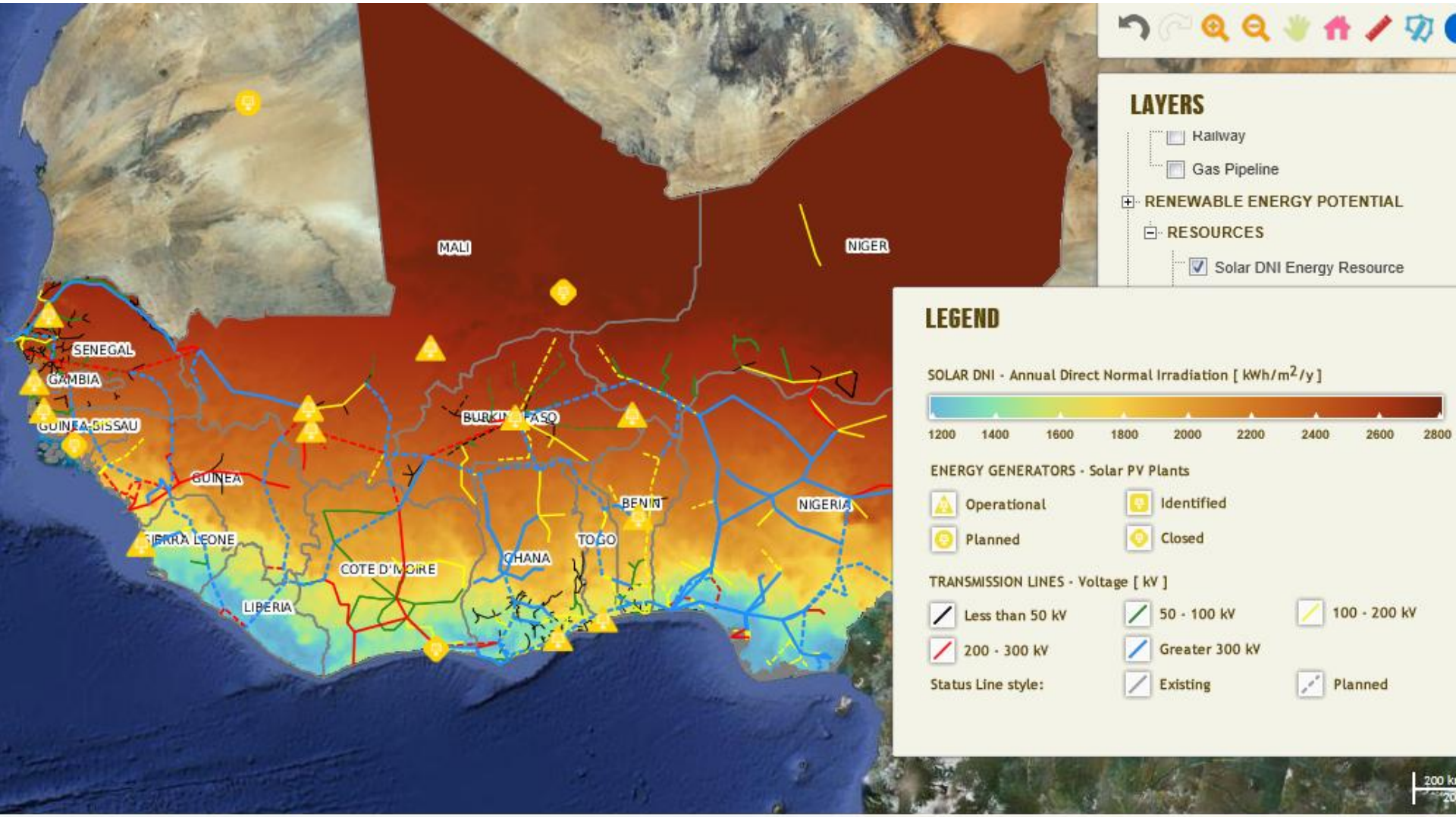
ECOWAS Observatory for RE&EE

Wind resource and PV power plants



ECOWAS Observatory for RE&EE

Solar resource and PV power plants



ECOWAS Capacity Building Program

- Regional Capacity Needs Assessment
- Regional Capacity Program under development

- Regional Workshop in Kumasi, Ghana, 24 to 26 August 2011
- Seven national follow-up trainings co-organised
- So far more than 170 experts trained
- Five local RETScreen Trainers certified (EN/FR/PT)

2012 INTERNATIONAL YEAR OF SUSTAINABLE ENERGY FOR ALL

RE & EE Investment and Business Promotion

ECREEE develops instruments and projects for urban and rural areas:

Investment Initiative for Medium to Large Scale Commercial Power Plants

- **EREIF: Establishment of a RE Infrastructures Fund for West Africa**
- **Advisor and facilitator for the National Governments in all the phases of a RE Power Plant**

The ECOWAS Renewable Energy Facility (EREF) for peri-urban and rural areas

- **A Small grand Funding facility to promote feasibility studies, RE business start-ups, and small rural projects**

ECREEE-MICRO Finance Scheme

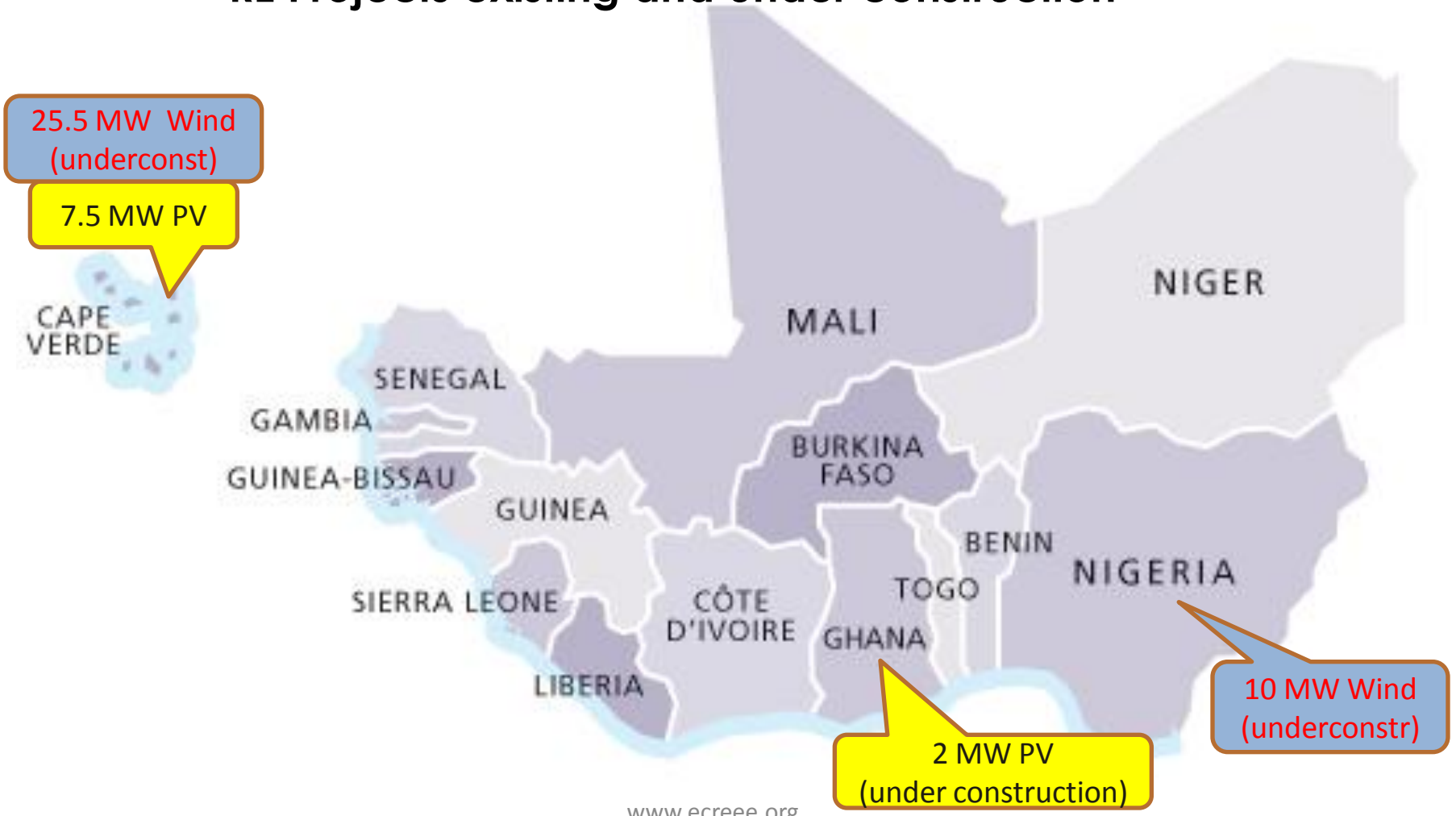
- **A Small credit scheme to support RE and EE projects in Rural Communities**

Several demonstration projects started

- **Rural Energy projects including Micro-Grid Projects**
- **ECOWAS HQ Solar Project in Abuja**
- **Solar Cooling Project in Praia**

Promotion of medium to large scale projects

RE Projects existing and under construction



ECOWAS Renewable Energy Investment Initiative (EREI)

Main activities

- Foster and endorse investment to promote RE infrastructure projects in West Africa
- Facilitate the execution of RE investment projects in the region;
- Link up different stakeholders involved in the finance and development of RE infrastructure projects in West Africa
- Decrease the misperceptions on investment of RE projects in West Africa through the appraisal from ECREEE, an specialized agency of the ECOWAS Regional Government
- Create a link between project promoters and financial partners and potential investors of these infrastructure projects
- Become a meeting point for stakeholders interested by the RE sector of West Africa
- Finance preparatory and feasibility activities of RE Infrastructure Projects in the region
- Provide reliable and updated information about existing and identified RE projects in the region

EREI: RE Investment Initiative

Overall pipeline of Medium-Large Scale Commercial Power Plants identified

156 Projects

Capacity in (MW)	Biofuel	Biomass	CSP	Large Hydro	Small Hydro	PV	Small hydro	Waste to power	Wind	Total
Benin					147	6	75		20	**248**
Burkina Faso				30		860	43	171		**1,105**
Cape Verde							19	20	8	68	**114**
Cote d'Ivoire		28					15	20			**63**
Gambia							20			21	**41**
Ghana				40		400	25		20	150	**635**
Guinea					937	383		43			**1,363**
Guinea Bissau							5	20			**25**
Liberia		73				130		12			**215**
Mali		30		30		234	115	16	15	3	**444**
Niger				50		130				30	**210**
Nigeria				50			40	591	20	20	**721**
Senegal		15					30			225	**270**
Sierra Leone	15	100				475		10			**600**
Togo						210	25			20	**255**
Grand Total	**15**	**246**	**200**	**937**	**2,970**	**343**	**978**	**63**	**557**	**6,308**

Investment (kEUR) **4,879,033**

EREI: RE Investment Initiative

First screening of Medium-Large Scale Commercial Power Plants identified (January 2012)

64 Projects

% RE Penetration in ECOWAS Grid: less than 20% (in capacity installed)

	PV	Wind	Biomass	Small hydro	Total country
Total technology	190.3	245.9	171	218	**825.2**
Total investment (Million €)	1236.95	368.85	427.5	436	**2469.3**

List of projects sent to SKM (March 2012)

41 Projects

	Biomass	PV	Small hydro	Wind	Total
Capacity (MW)	**43**	**147**	**153**	**208**	**552**

EREI: RE Investment Initiative

ECOWAS RE Investment and Business Forum

1st Forum in Dakar with the support of African Development Bank (September 2012)

Objectives:

- Link up different stakeholders involved in the finance and development of RE infrastructure projects in West Africa
- Create a link between project promoters and financial partners and potential investors of these infrastructure projects
- Become a meeting point for stakeholders interested by the RE sector of West Africa

ECREEE AND PARTNERS

Core Partners

MINISTERIO DE ASUNTOS EXTERIORES Y DE COOPERACIÓN — aecid

Austrian Development Cooperation

UNIDO

New Partners

EU

USAID FROM THE AMERICAN PEOPLE

gef

Other Partners

GERMANY

JAPAN

FRANCE

?

Technical Partners

ESMAP Energy Sector Management Assistance Program

reeep renewable energy & energy efficiency partnership

ADEME Agence de l'Environnement et de la Maîtrise de l'Energie

itc INSTITUTO TECNOLÓGICO DE CANARIAS

EUEI Partnership Dialogue Facility Energy policies for development

UNDP

INTERNATIONAL RENEWABLE ENERGY AGENCY IRENA

AUSTRIAN ENERGY AGENCY

Alliance for Rural Electrification

EREC

GBEP Global Bioenergy Partnership

Thank you! Merci! Muito Obrigado!

Visit our website www.ecreee.org