



ECOWAS OBSERVATORY FOR RENEWABLE ENERGY & ENERGY EFFICIENCY (EORE)

Considerations

May 2012





Foundation of ECREEE



- The Ouagadougou Declaration from 12 November 2007 highlighted the need for a regional RE&EE Centre; initial pledge by the Austrian Minister for Foreign Affairs;
- Foundation laid by ECOWAS Energy Ministers and Regulation C/REG.23/11/08 of the 61st Session of ECOWAS Council of Ministers in Ouagadougou, Burkina Faso, on November 23, 2008;
- The Vision of ECREEE is to improve energy security, increase access to modern energy services and support the region's economic and social development in an environmentally benign manner through the promotion and use of renewable energy and energy efficient (RE&EE) technologies in ECOWAS member states.
- Launch of the ECREEE preparatory phase in November 2009 with support of the ECOWAS Commission, the Austrian and Spanish Governments and technical assistance from UNIDO.
- Official Inauguration and First Board meeting launched operational phase of ECREEE on 6th July 2010



Objectives of ECREEE

Objective 1

Tailored policy, legal and regulatory frameworks and quality standards

Objective 2

Capacity development of key groups of different sectors

Objective 3

Advocacy, awareness raising, knowledge management and networking

Objective 4

Investment promotion and business development
Development of Renewable Energy and Energy Efficiency Projects



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



- **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);



Enabling factors for RE in West Africa



New policy framework in the ECOWAS member states. Examples:

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
- Elaborated and pending to approval of Renewable Energy Bill

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

UEMOA Countries and Cape Verde

Tax exemption on RE products

ECREEE's role

At a regional level: during 2011, elaboration of a Regional Policy and Guidelines to promote Renewable Energy and Energy Efficiency in ECOWAS countries.

At a national level: assist the different government to elaborate and approve the regulatory framework to promote RE.



Enabling factors for RE in West Africa



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 for RE in West Africa



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
Commissioned in March 2012

2.5 MW Wind Farm, in Boavista, Cape Verde
Under construction



Enabling factors for RE in West Africa



SPEC-SOLAR First PV modules production (assembly) plant in West Africa



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



Enabling factors for RE in West Africa



Existing or planned Solar and Wind installations in ECOWAS member states:

Cape Verde

- PV: 7,5 MW installed + 2,5 MW projected.
- Wind: 28 MW under construction

The Government has an investment plan of about 250 million euro to construct RE installations (96 MW), mainly wind and solar, for the following 10 years.

Ghana

- PV: 20 MW projected (contracting first 2.5 MW)
- Wind: 100 MW projected

Senegal

- PV: 15 MW projected
- Wind: 50 MW + 50 MW projected

Nigeria

- Wind: 10 MW under construction

Burkina Faso

- PV: 40 MW projected

Benin Faso

- PV: 6 MW projected

ECREEE's role:

Provide reliable data (resource assessment, geographical information system, observatory)

To support on the feasibility studies.

To support on the fund-raising of the projects.



Enabling factors for RE in West Africa



Data collection and management in ECOWAS member states

Some UEMOA countries (Senegal, Cote d'Ivoire, Mali, Burkina Faso and Niger)

- Systeme Information de l'Energie (SIE)

Ghana

- Energy Commission

Nigeria

- Energy Commission

Cape Verde

- Comprehensive Assessment on Electricity sector

ECREEE's role:

Compile available data and obtain missing gaps

Analyse and improve quality and format

Update data in a periodic basis and using national data providers (ministries)

Show and disseminate data through website and annual reports



ECOWAS Observatory for Renewable Energy & Energy Efficiency (EORE)

Need

ECREEE identified the need for a web-based information and knowledge platform designed to facilitate the dynamic sharing of information

Objective

Provide reliable, well-informed, context-driven, targeted and timely **information** in the field of RE&EE.

Outcomes

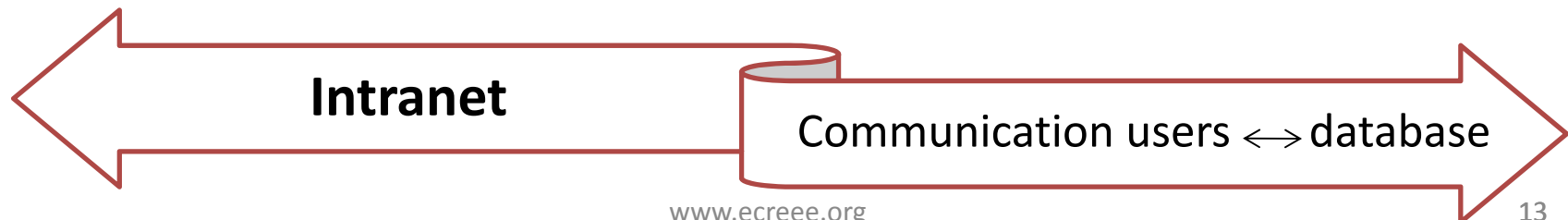
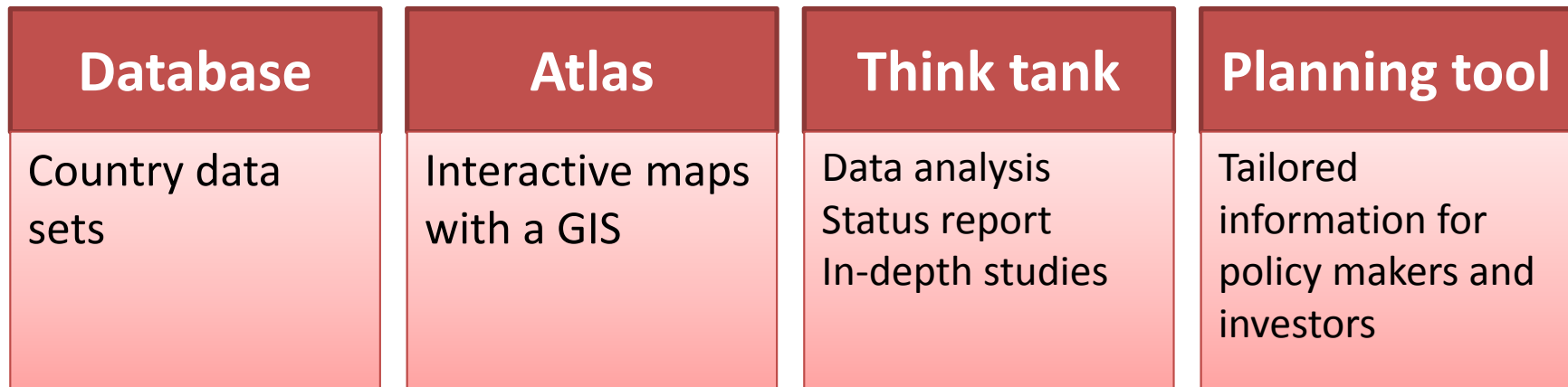
- To yield a considerable increase in investments in renewable energy by providing feasibility data, optimal project site planning and other specific project details to investors, decision makers and other key players.
- To connect the key players and expert in the energy sector from within and outside the region with key information on best practices and technical existing know-how.



ECOWAS Observatory for Renewable Energy & Energy Efficiency (EORE)

Concept

ECOWAS OBSERVATORY
FOR RE&EE



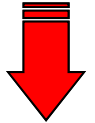


ECOWAS Renewable Energy Observatory (EREO)

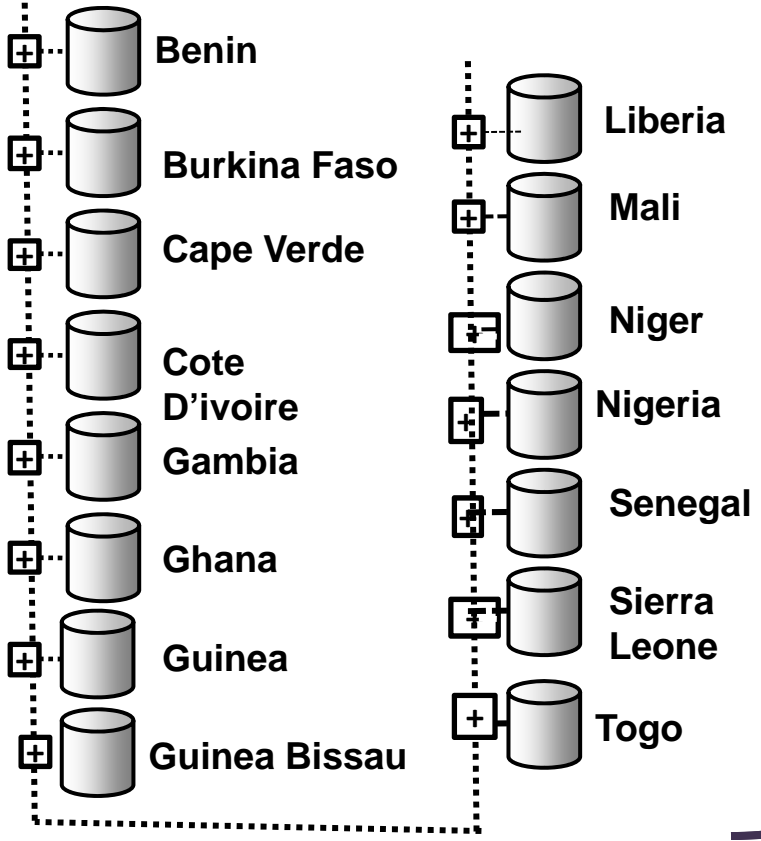
Regional maps

- RE resources/potentials:
 - Solar Resource DNI
 - Solar Resource GHI
 - Solar Resource Tilt
 - average Wind Speed
 - Biomass potential (according to biocrops)
 - Small Hydro Potential
- Electrical Transmission/distribution grids
- Population density
- Energy demand map
- Existing and planned RE&EE programs and project sites in ECOWAS region
- RE&EE Key Stakeholders (universities, companies, ministries including contact data)
- Other infrastructure - Roads, Railway, Airports, Ports
- Protected areas – environmental, military, urban other protected uses (tourism, mining, industry, etc.)
- Access to energy: Population electrified and non-electrified
- Energy efficiency
- RE&EE events

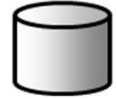
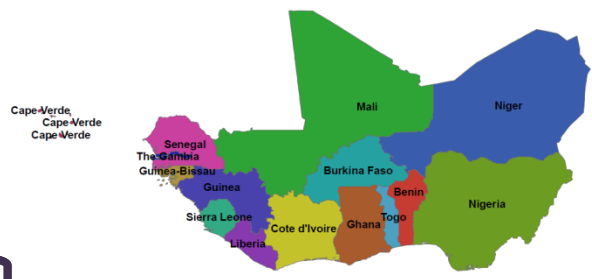
ECOWAS Geodatabase



ECOWAS STATES



ECOWAS MEMBER STATES



COUNTRY DATA SETS

- + Countries Profile
- + Resources
- + Production
- + Transmission
- + Distribution
- + Energy Efficiency
- + Actors
- + Land Cover
- + Administrative Boundries
- + Infrastructure
- + Investment Information



ECOWAS Renewable Energy Observatory (EREO)

Type of data to show

RE policy situation in ECOWAS countries

Targets for RE penetration	Benin	Burkina Faso	Cape Verde	Ghana	Guinea	Guinea-Bissau	Ivory Coast	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	The Gambia	Togo
Medium term	2015		2010		2013		2015	2015	2010	2010	2020				
Targets	13.5%	nil	27%		2->6%	nil	5%	10%	6%	10%	15%		nil	nil	nil
Long term	2025		2030	2020	2019				2015		2030	2020			
Targets	14.4%	nil	50%	10%	8-25%	nil			25%		23-36%	15%	nil	nil	nil

RE and Policy Documents	Benin	Burkina Faso	Cape Verde	Ghana	Guinea	Guinea-Bissau	Ivory Coast	Liberia	Mali	Niger	Nigeria	Senegal	Sierra Leone	The Gambia	Togo
RE /Energy Policy								na							
RE / Electricity bill													na		
Specific RE Policy															
Specific RE law															



ECOWAS Renewable Energy Observatory (EREO)

Type of data to show

Country data set of RE sector

Resources	Renewable	Transmission	Distribution	Consumer price
	Conventional			Energy (electricity) demand
Installed capacity	Renewable			Transmission
	Conventional		Purchase price	
Energy produced	Renewable		Sell price	
	Conventional		Transmission lines	
	Conventional		Energy supply chains	
			Total electricity transmitted	
			Losses	
			Electrification rate	
		Storage facilities		

Additionally:

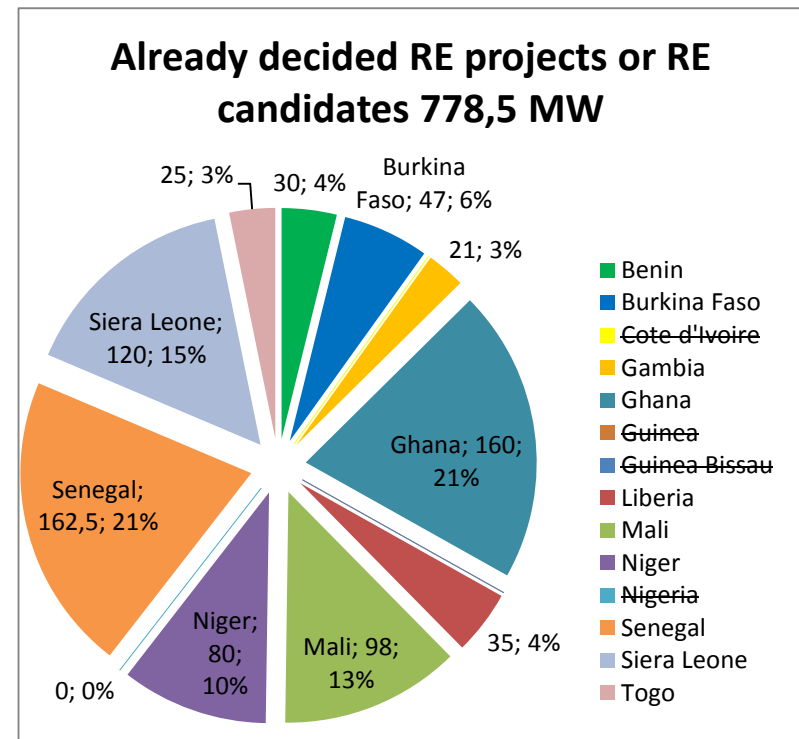
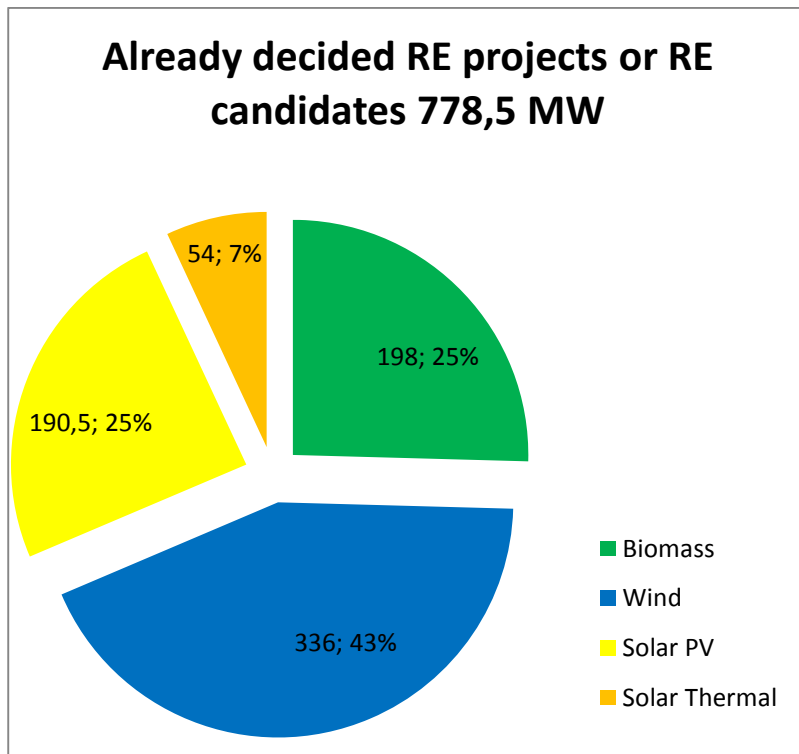
- Policies and regulatory framework
- Socio-economic indicators and general data
- Existing and planned RE installations
- Existing RE Programmes
- Main stakeholders



ECOWAS Renewable Energy Observatory (EREO)

Type of data to show

RE priority projects by 2020 (according to WAPP Master Plan)

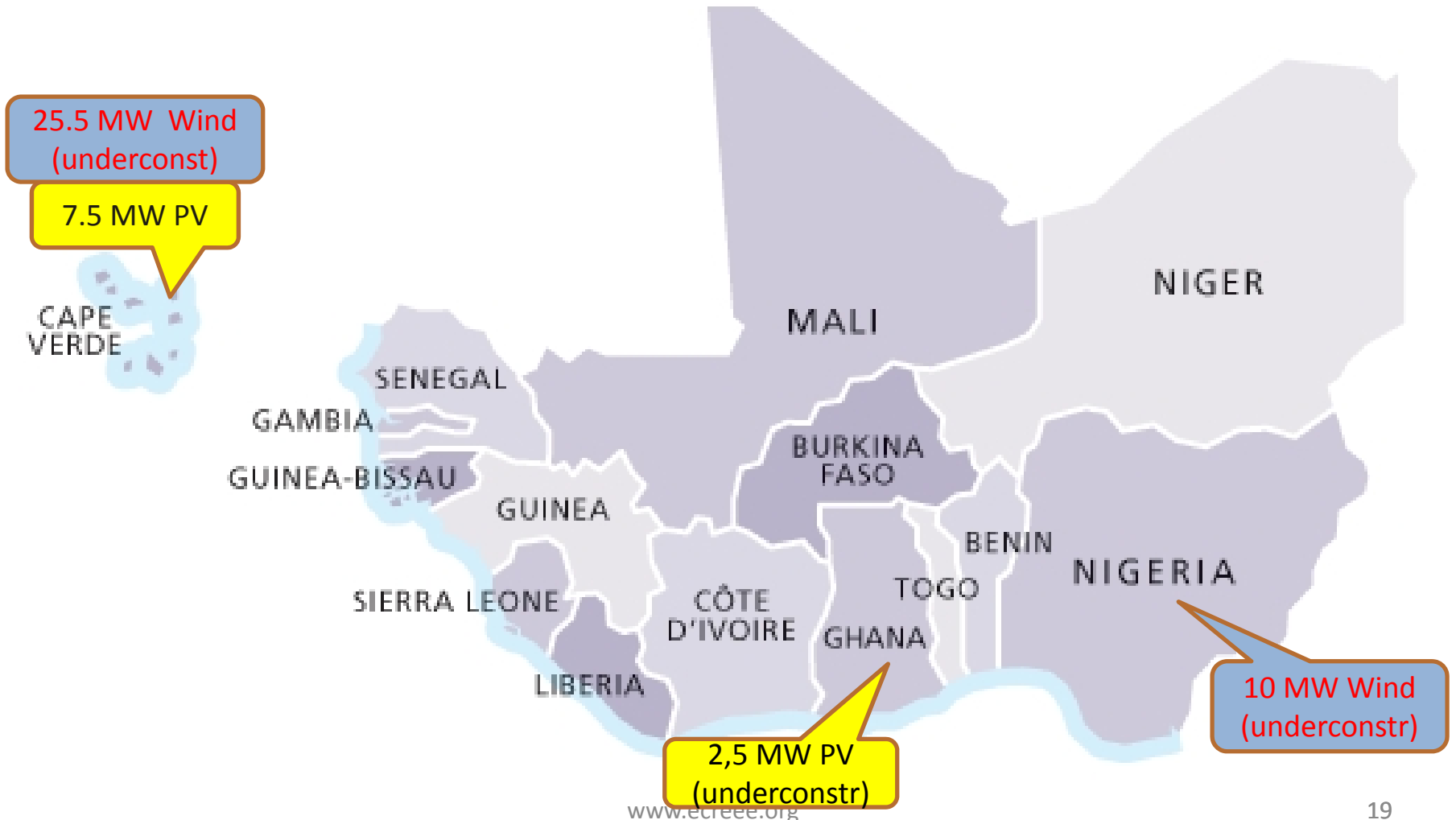




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Type of data to show

RE projects and installations information

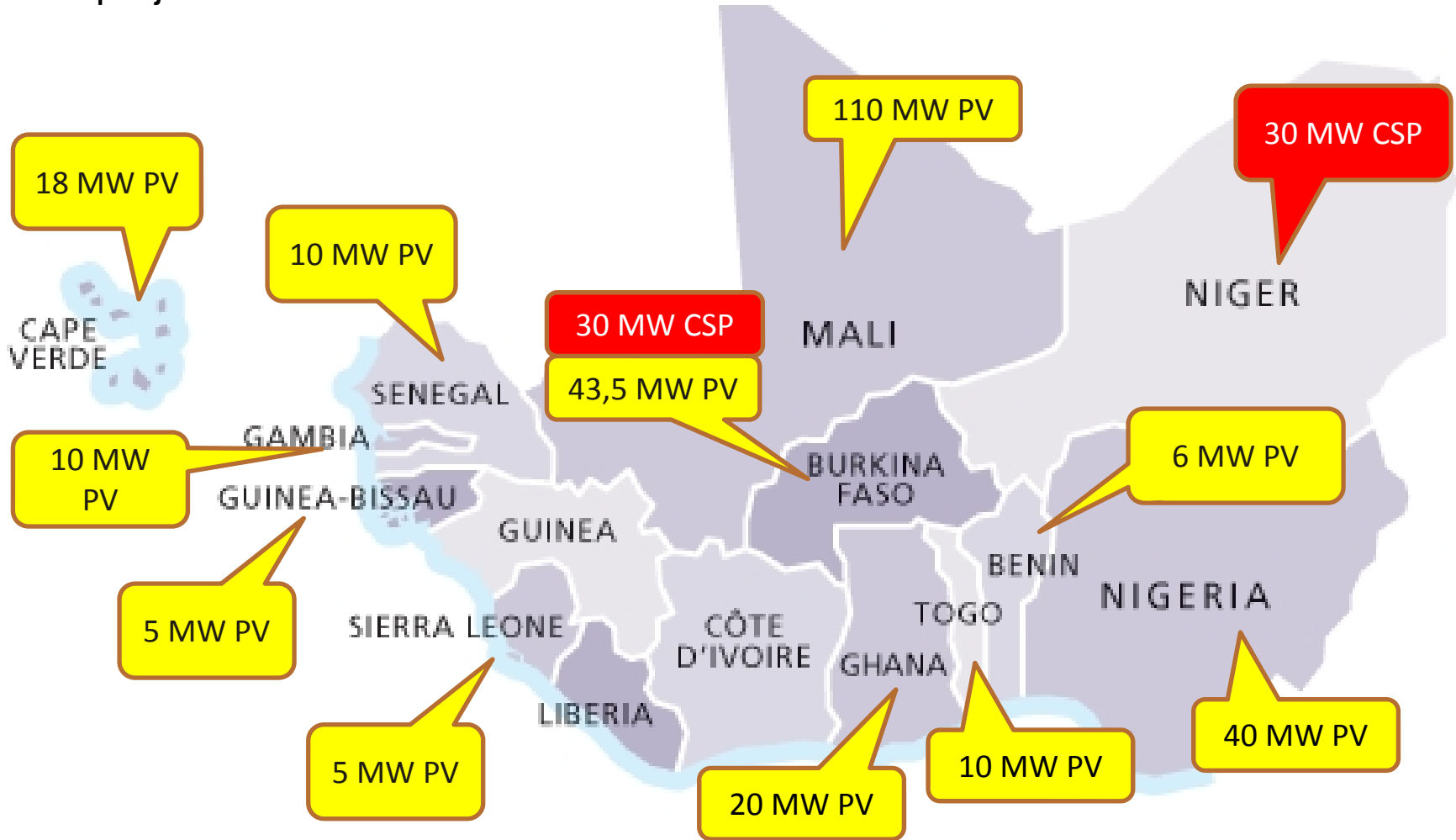




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Type of data to show

Solar projected installations information





Thank you! Merci! Muito obrigado!



*ECOWAS Regional Centre for
Renewable Energy and Energy Efficiency*

*Centre Régional pour les Energies Renouvelables
et l'Efficacité Energétique de la CEDEAO*

*Centro Regional para Energias Renováveis e
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