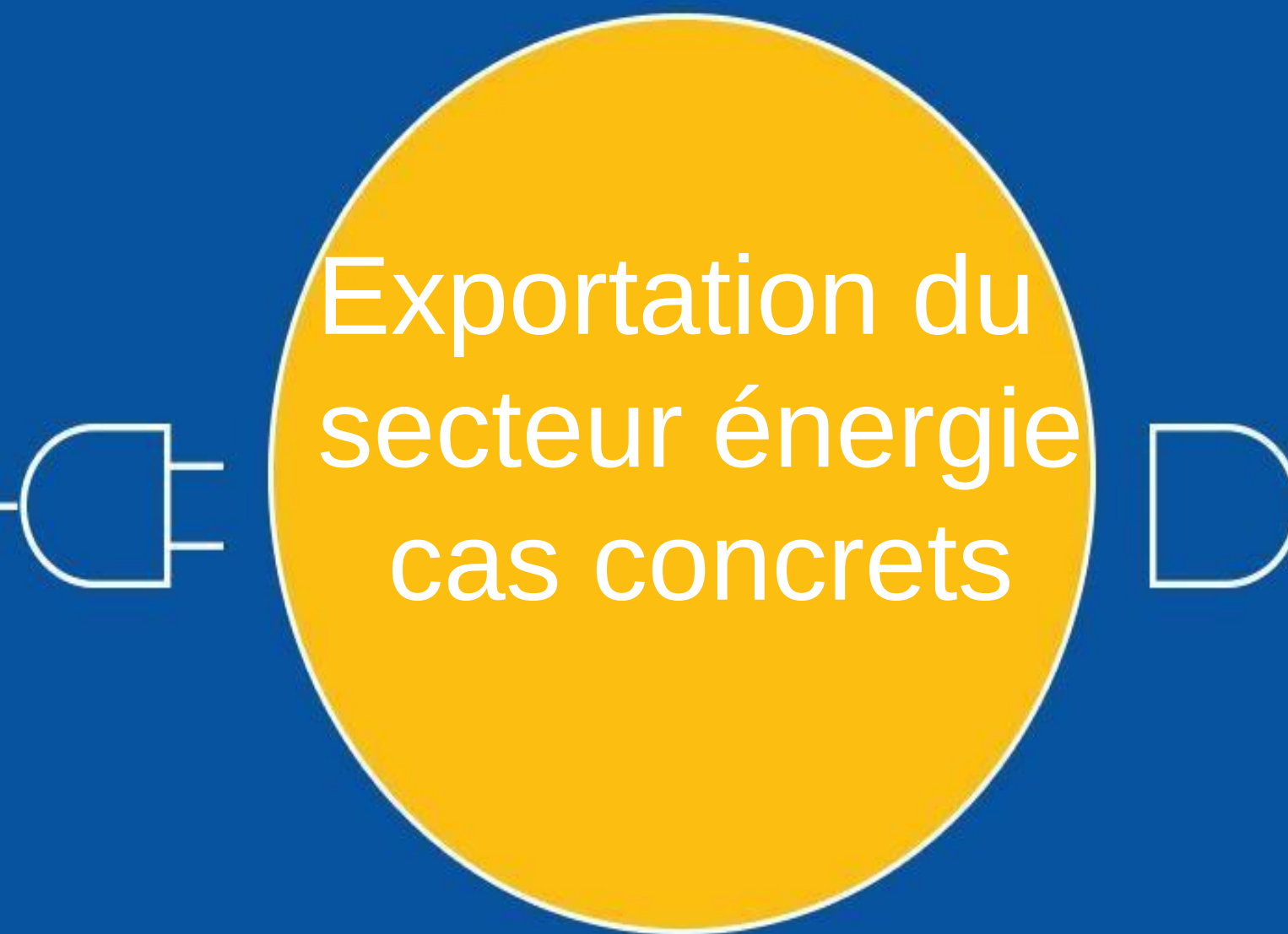


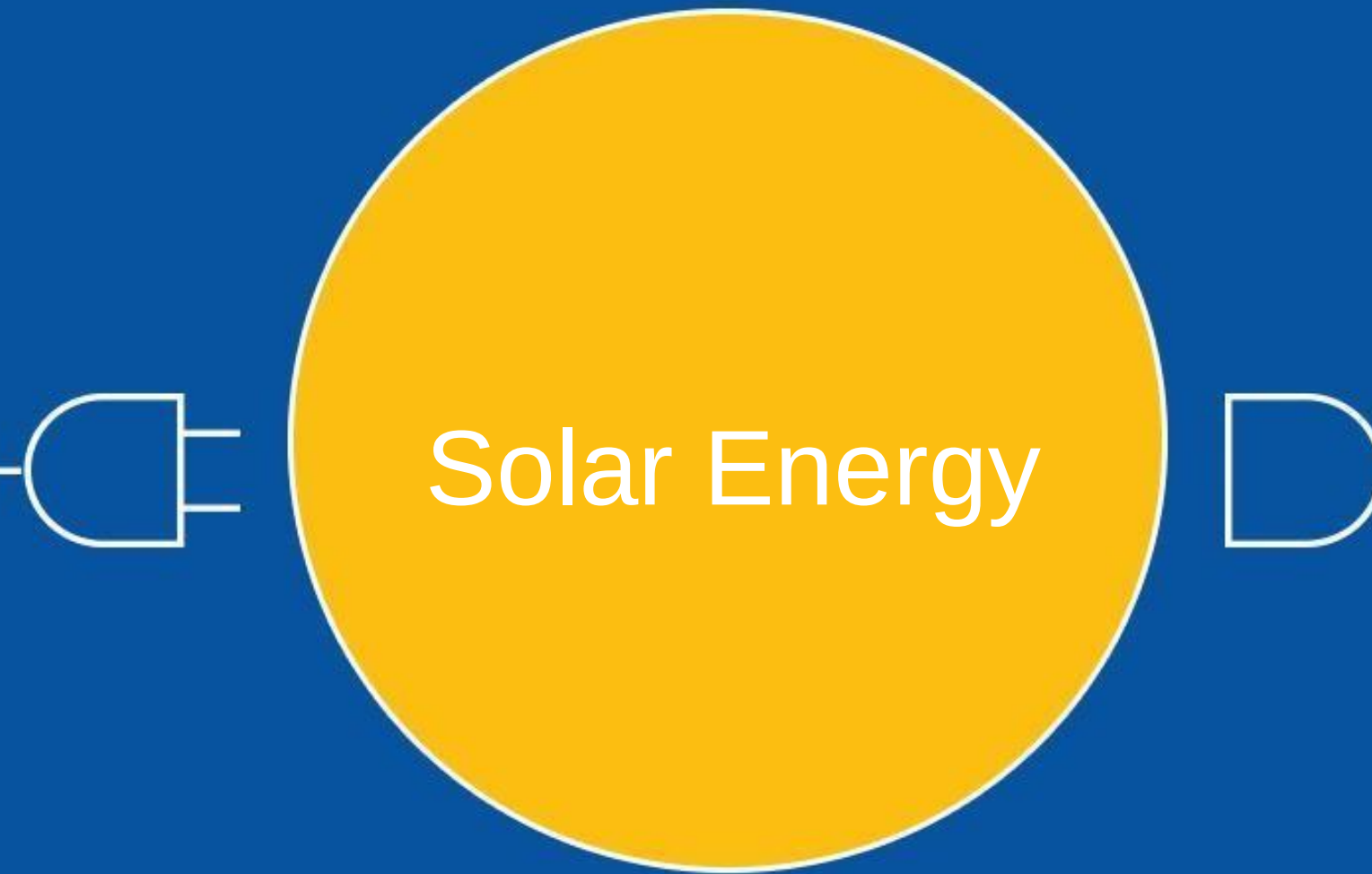
Marchés équipements électriques: potentialités d'exportations



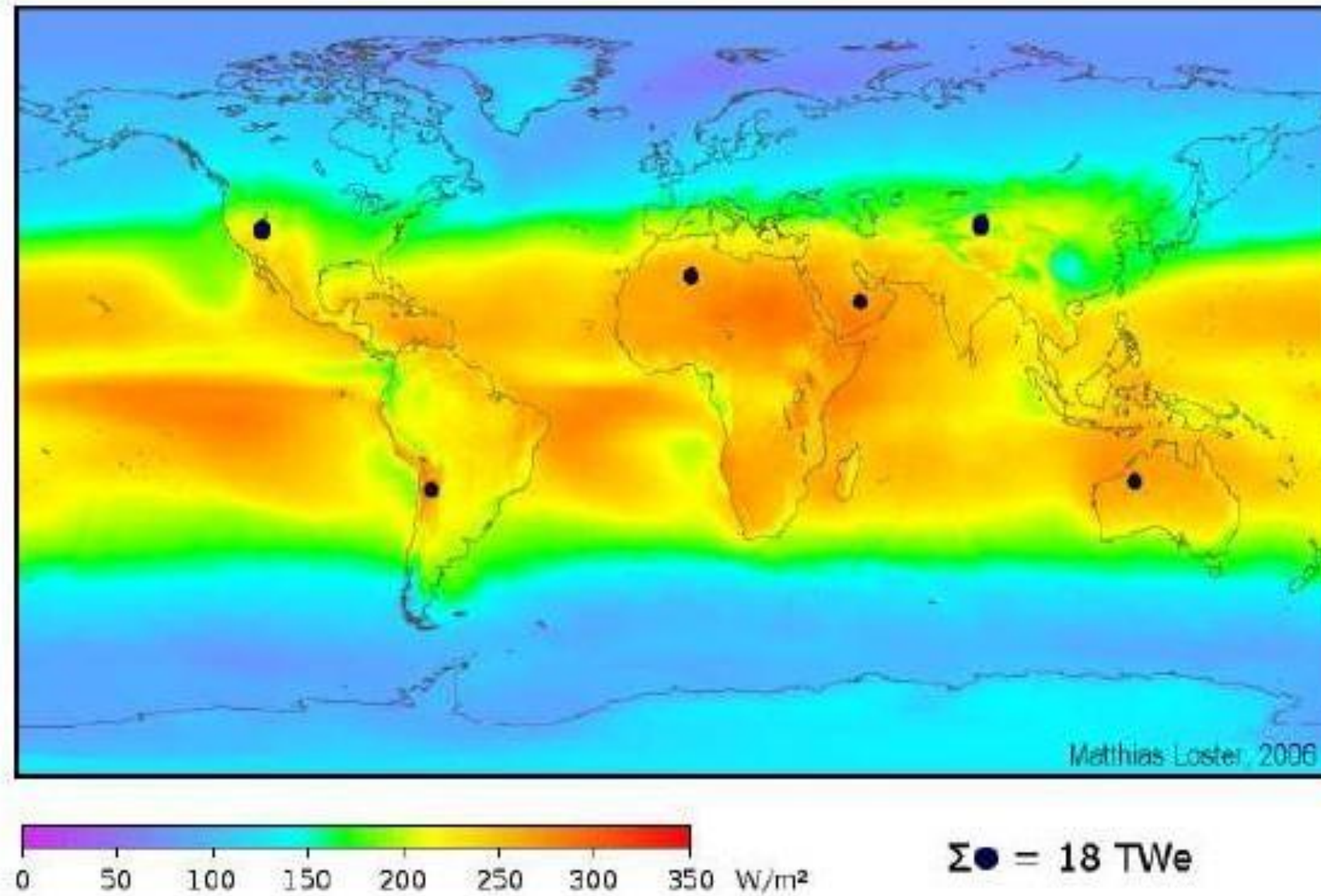
Par: DR KHELIFA Mohamed
Opérateur économique

BLIDA, juin 2021

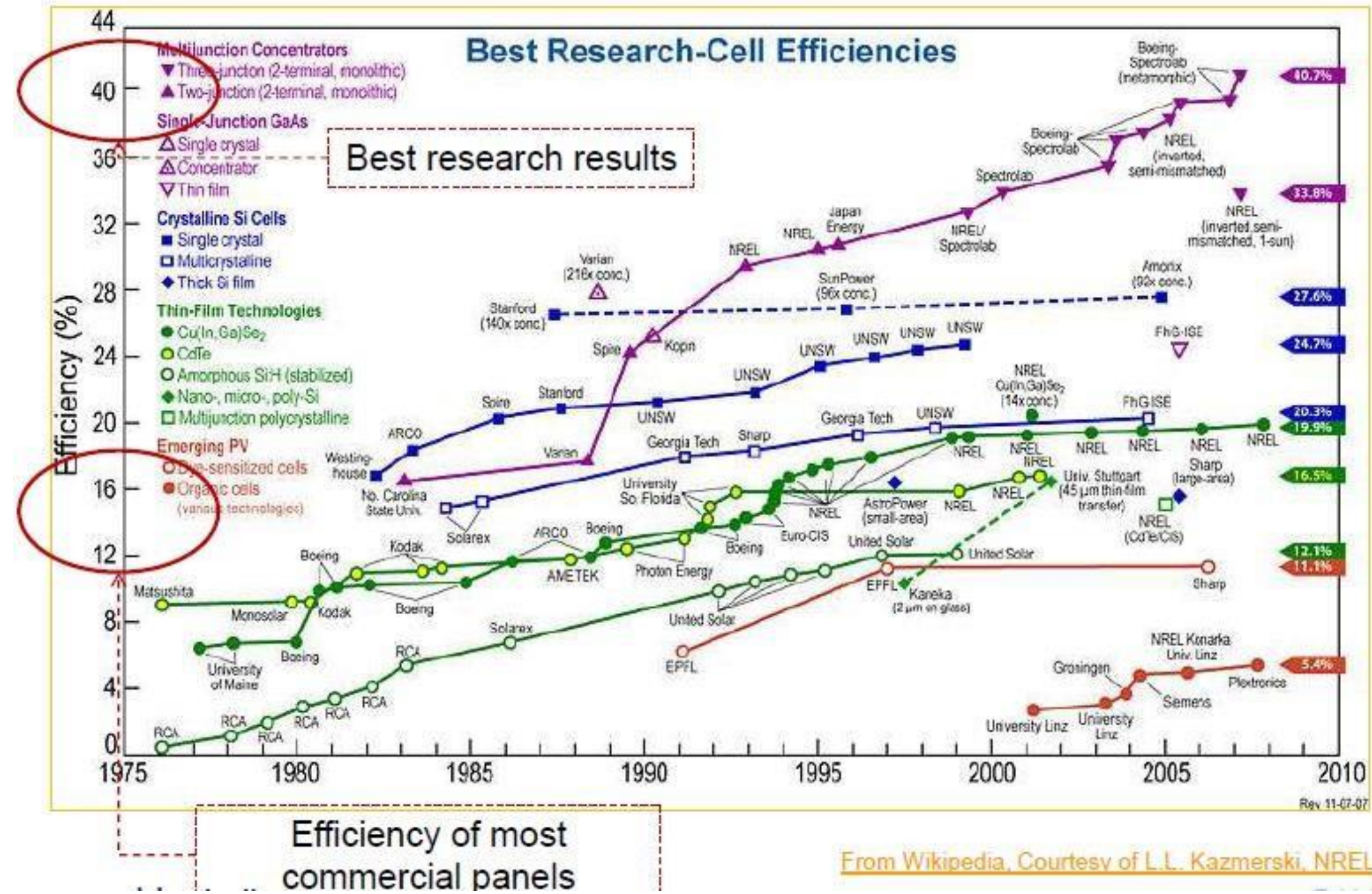
Green power against poverty



Scope



A pictorial view of the potentialities of photovoltaic: the areas defined by the dark disks could provide more than the world's total primary energy demand (assuming a conversion efficiency of 8%).



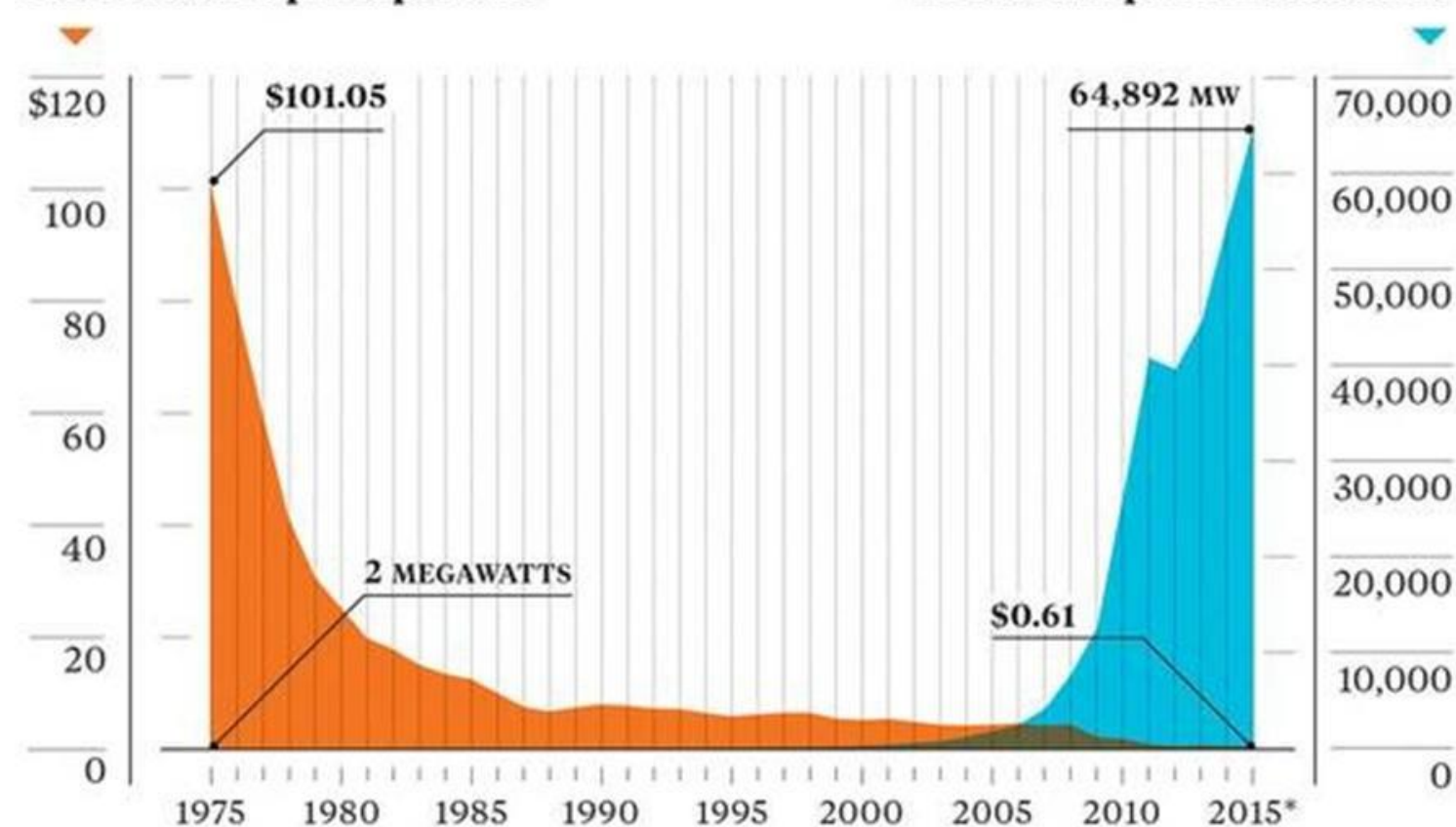


SamaSun Intl.

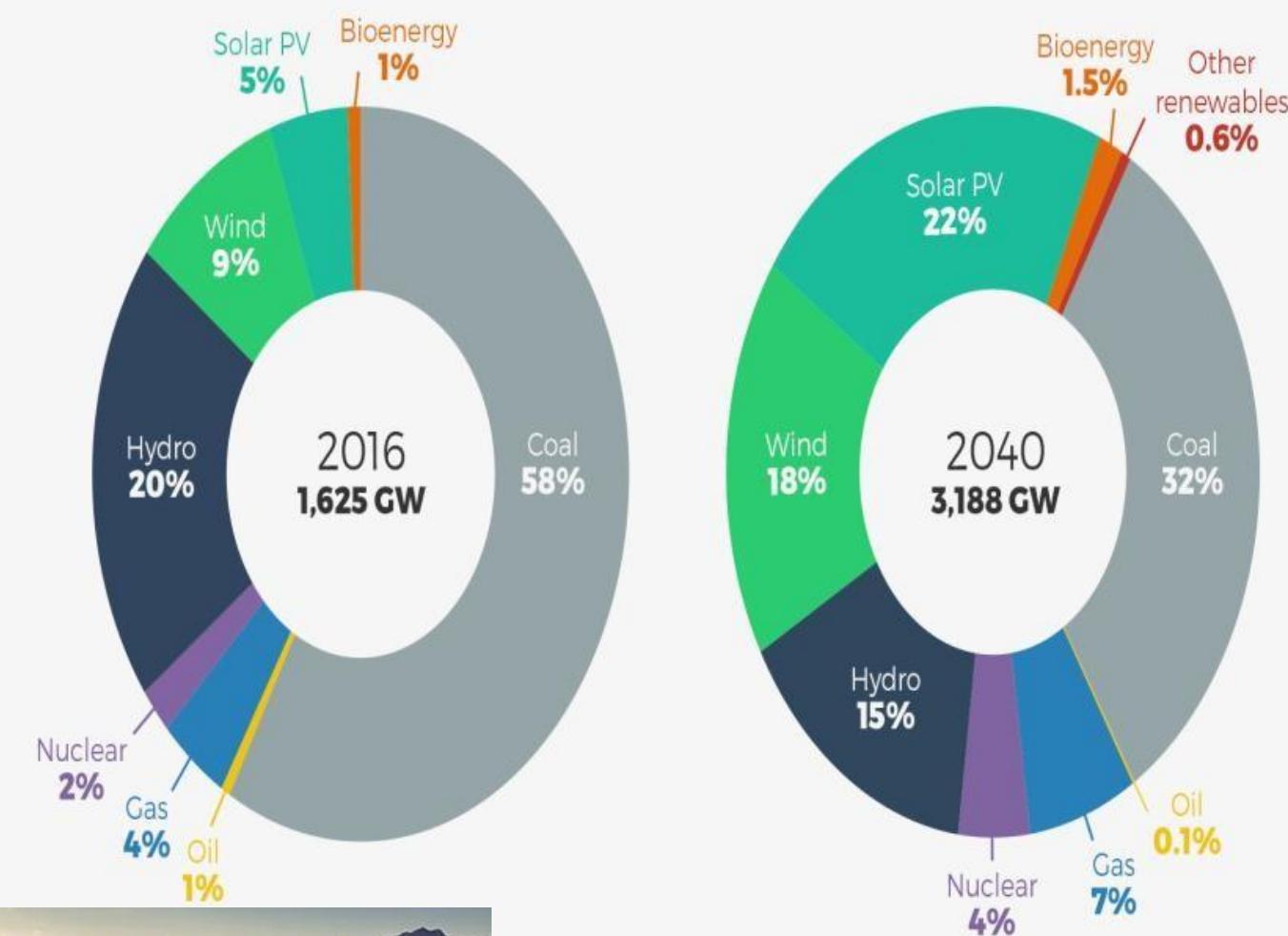
Scope



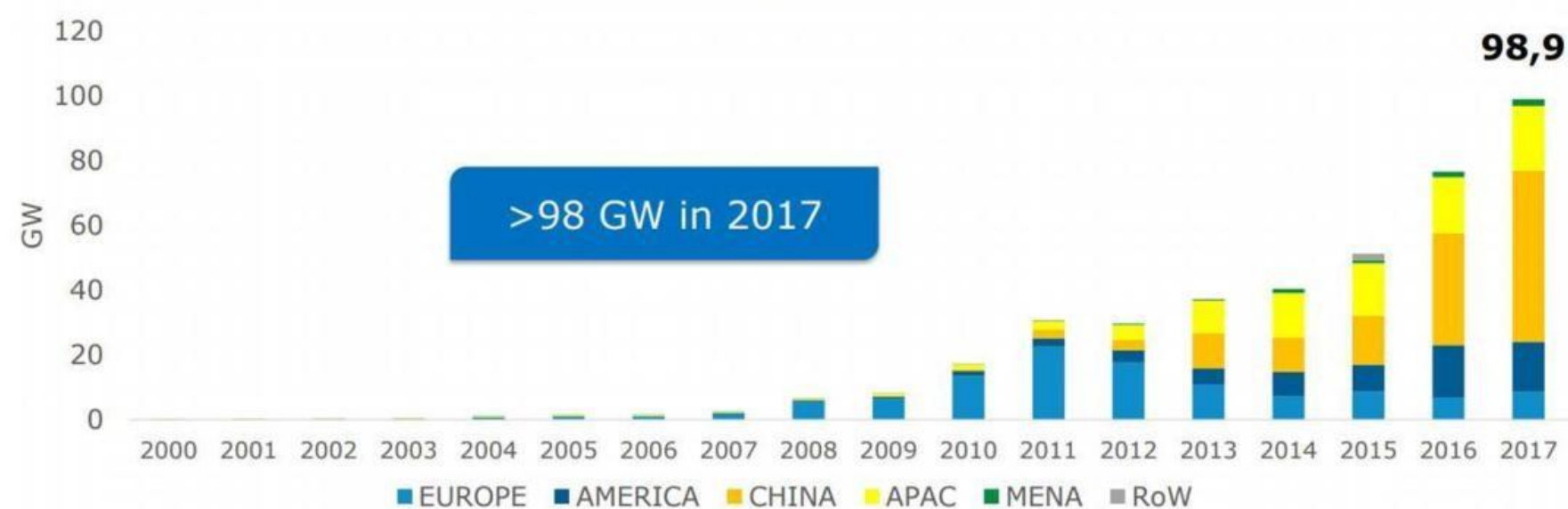
Price of a solar panel per watt



Installed power generation capacity in China in the New Policies Scenario
World Energy Outlook 2017



EVOLUTION OF GLOBAL ANNUAL SOLAR PV INSTALLED CAPACITY 2000 - 2017

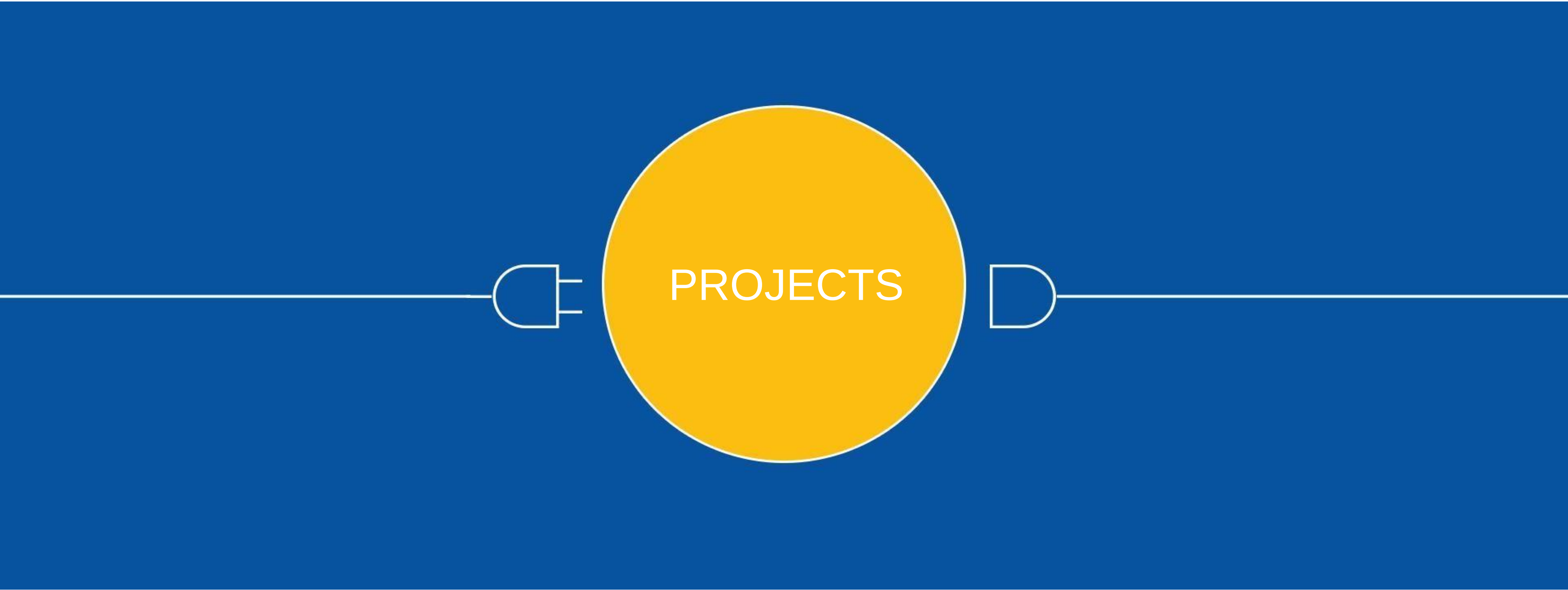


Global annual PV installed capacity increased by over 29% YoY in 2017



ALgérie:
Capacité installée
21GW





Solar Village



Location	Country	Algeria
		South Algeria
Date of completion		1999 à 2001
Project	Type	20 village
	Power	453 KW



Programme de réalisation de Sonelgaz: 18 villages solaires

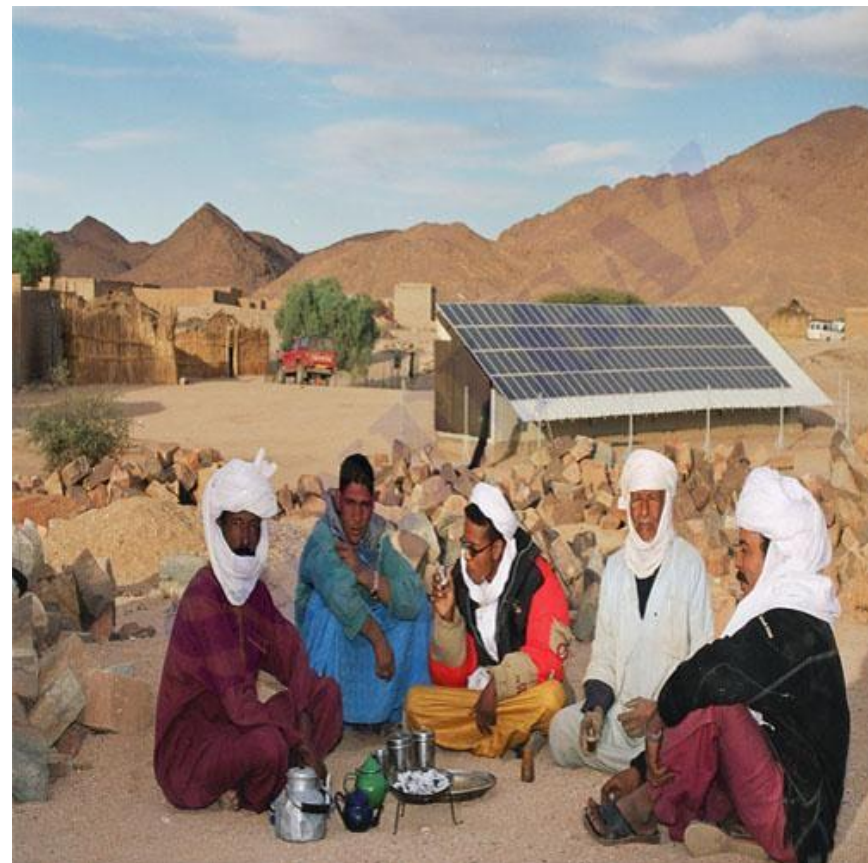
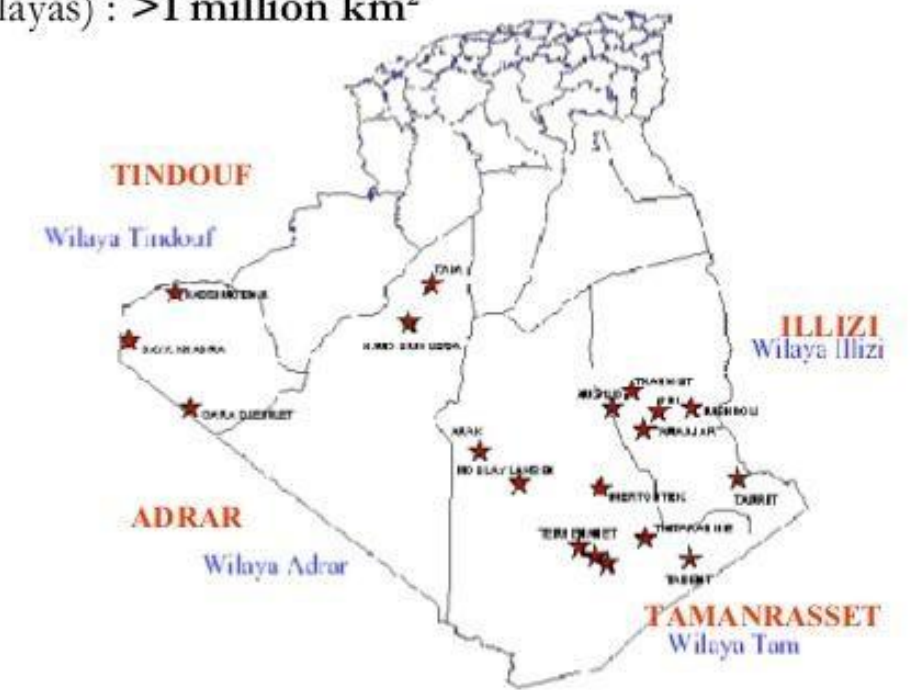
Données

Nombre de systèmes PV : 109

Puissance totale installée : 453 kWc

Nombre de foyers électrifiés : 908

Superficie totale (4 wilayas) : >1 million km²



Solar home system



Location	Country	Algeria
Date of completion		2003 à 2006
Project	Type	8900 SHS
	Power	1.3 MW



Pumping system



Location	Country	Algeria
		South Algeria
Date of completion		2003 à 2006
Project	Type	478 Solar pump
	Power	696 KW



wind system



Location	Country	Algeria
Date of completion		2002 à 2011
Project	Type	179 wind system
	Power	



wind solar system



Location	Country	Algeria
	City	Saida
Date of completion		2007
Project	Type	Hybrid station of water treatment
	Power	2,1 KW



Geothermal



Location	Country	Algeria
	City	SIDI AISSA SAIDA
Date of completion		2010
Project	Type	AC of school library
	Power	32 KW



Village Algeria



Location	Country	Algeria
	City	Hassi Mounir Tindouf
Date of completion		2009
Project	Type	Central Photovoltaic
	Power	43,2 KW



Telecommunication tower



Location	Country		Algeria
	City		DJELFA
Date of completion			2013
Project	Type		Transmission relays
	Power		48 KW



Weather station

Location	Country	Algeria
	City	ASKREM TAMENRASSET
Date of completion		2011
Project	Type	Weather station
	Power	45 KW



photovoltaic station



Location	Country		Algeria
	City		Ghara Djebilet
Date of completion			2009
Project	Type		Central Photovoltaic
	Power		9 KW



Airoports lighting

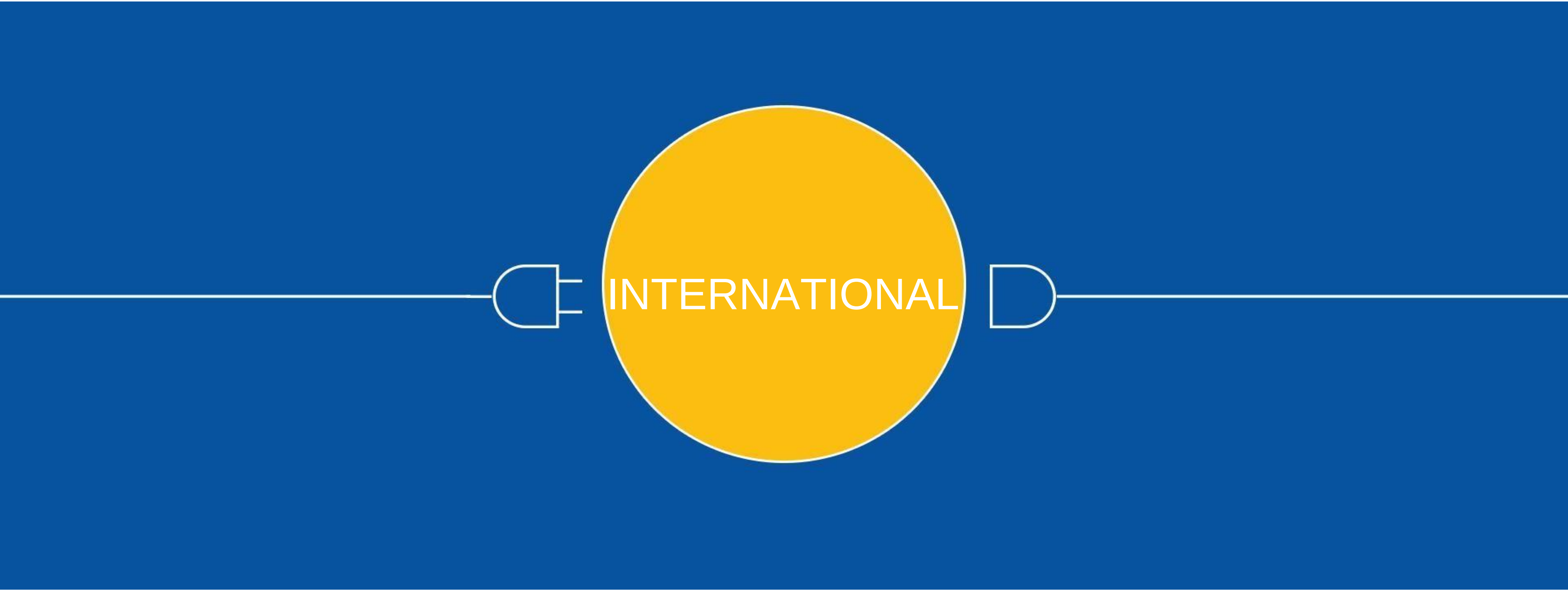


Location	Country	Algeria
	City	El Baydh, Bechar, mechar, mascara, adrar, tindouf, timimoun
Date of completion		2014
Project	Type	Perimeter lighting of Airports
	Power	152 KW

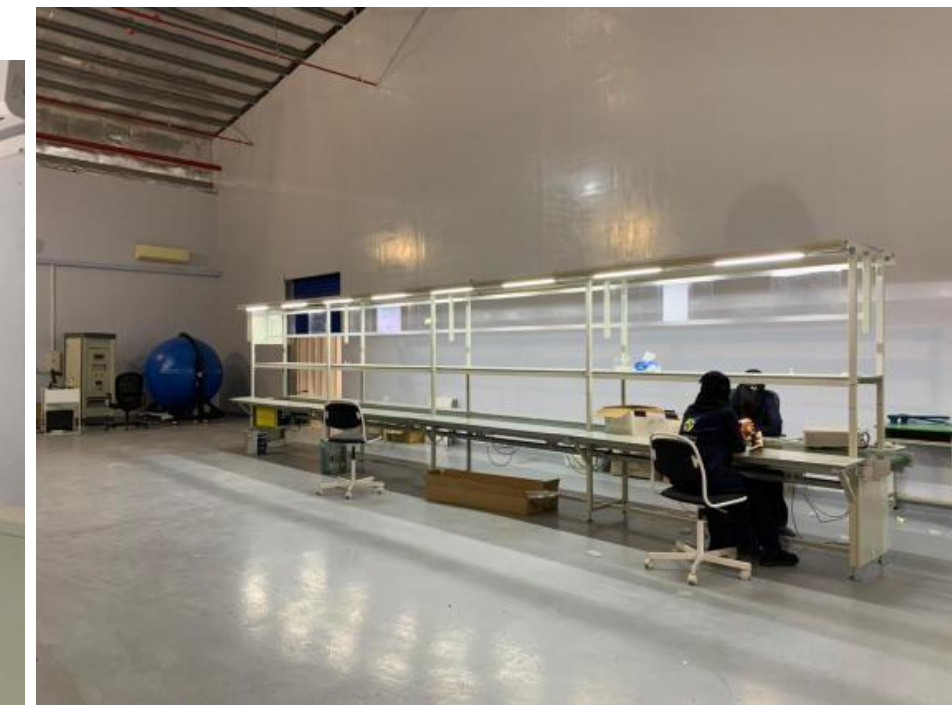


ALGERIA LED lighting manufacturer





KSA LED lighting manufacturer



SUDAN LED lighting manufacturer





Location	Country	Mali
	City	Bouhassa
Date of completion		2011
Project	Type	Mini-grid.
	Power	24 KW



MALI



Location	Country	Mali
	City	Tinzaouatine
Date of completion		2011
Project	Type	Solar home system & solar pumping
	Power	31,5 KW



ON GRID LIGHTING



Dubai FESTIVAL CITY, UAE
2,000 smart solar poles



ON GRID LIGHTIN AND PARCKING SAFARI PARK UAE



ON GRID LIGHTIN AND PARCKING BAPCO BAHRAIN



Installation Type	Number of Units	Installation Size (MWp)
Carports	4,916	1.18
Ground-Mounts	2,088	0.501
Carports	11,250	2.7
Pole-Mounts	200	0.048
Solar Trees	2,379	0.571



ON GRID school system madinah KSA



Solar lighting



Location	Country	Sudan
Date of completion		2016
Project	Type	lighting
	Power	100 W



Solar lighting



Location	Country	Sudan
Date of completion		2016
Project	Type	Khalawi light
	Power	
		300 W



Solar lighting



Location	Country	Sudan
Date of completion		2016
Project	Type	Khartoum university 187 streetlight
	Power	130 W



Solar kit



Location	Country	Sudan
		KURDOFAN
Date of completion		2016
Project	Type	SHS
	Power	500 W



Solar station

Location	Country	Sudan
		Khartoum
Date of completion		2016
Project	Type	Solar parking
	Power	3000 W



Solar pump



Location	Country	Sudan
		DARFUR
Date of completion		2016
Project	Type	32 pumping system
	Power	11.5 KW



Solar pivot



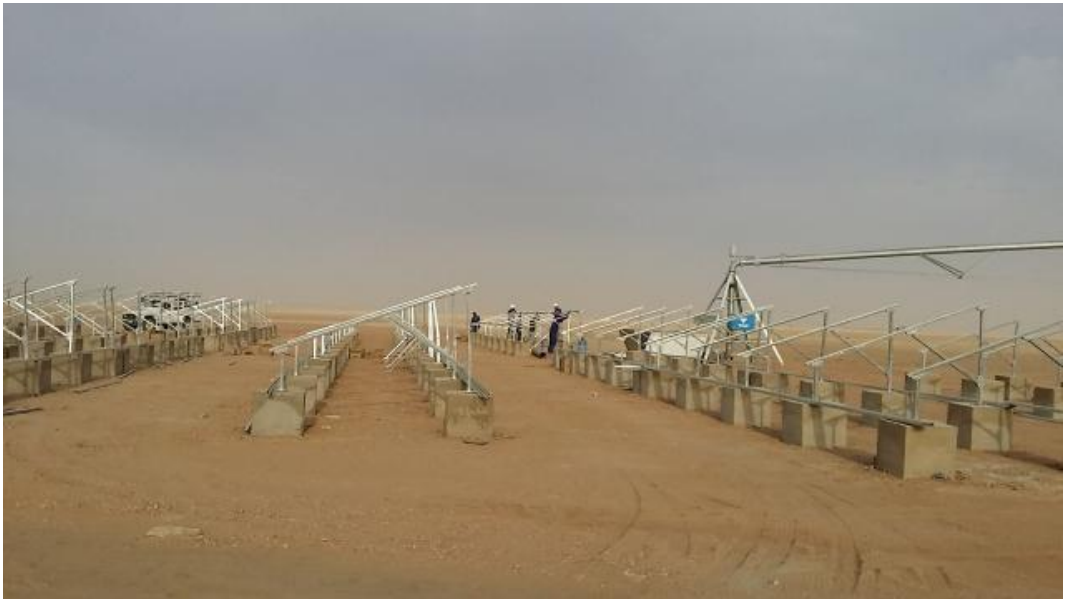
Location	Country	Sudan
		GHABA
Date of completion		2016
Project	Type	Pumping 180kw
	Power	323 KW



Solar pivot



Location	Country	Sudan
		BARBAR
Date of completion		2016
Project	Type	53 pumping pivot
	Power	96 KW



Solar on grid system

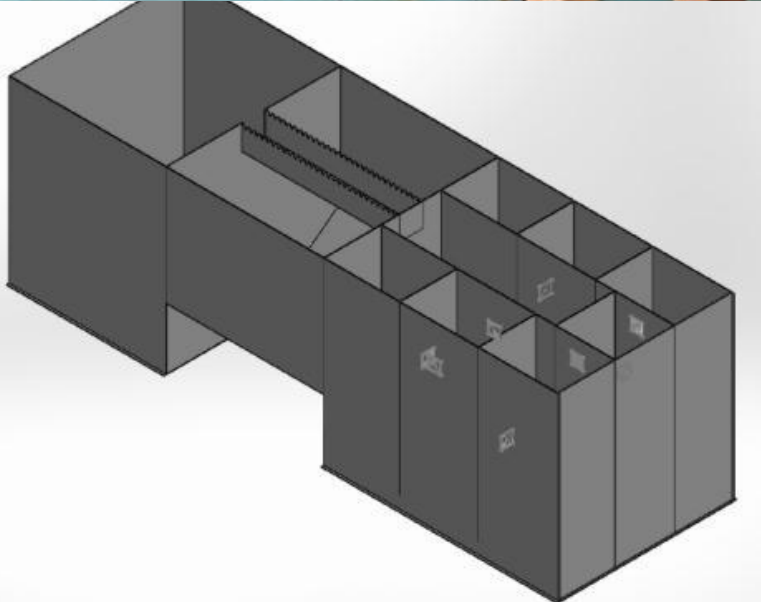


Location	Country	Sudan
		KHARTOUM
Date of completion		2019
Project	Type	On grid system French embassy
	Power	12 KW



SOLAR FILTRATION STATION system

Location	Country	Sudan
		KHARTOUM
Date of completion		2020
Project	Type	SOLAR filtration station
	Power	20 m3/h 5 KW



Solar center



Africa – Trade case



BURKINA FASO



Africa – Trade case



Guinée



Africa – Trade case



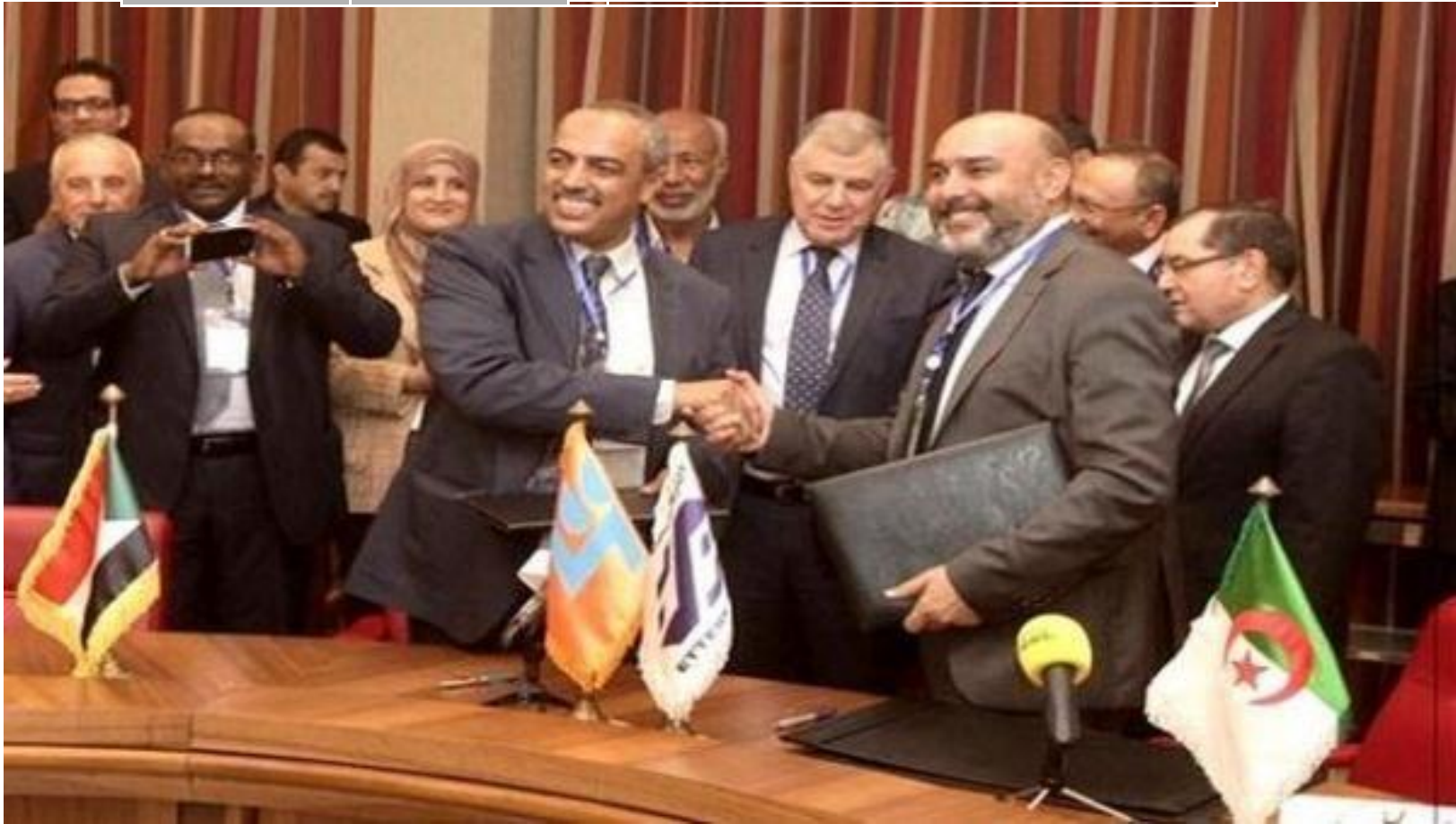
Mali



Sonelgaz projects



Location	Country	Sudan
		Port sudan
Date of completion		2017
Project	Type	Electric central
	Power	1200 MW



ENIE SOLAR panels manufacturer

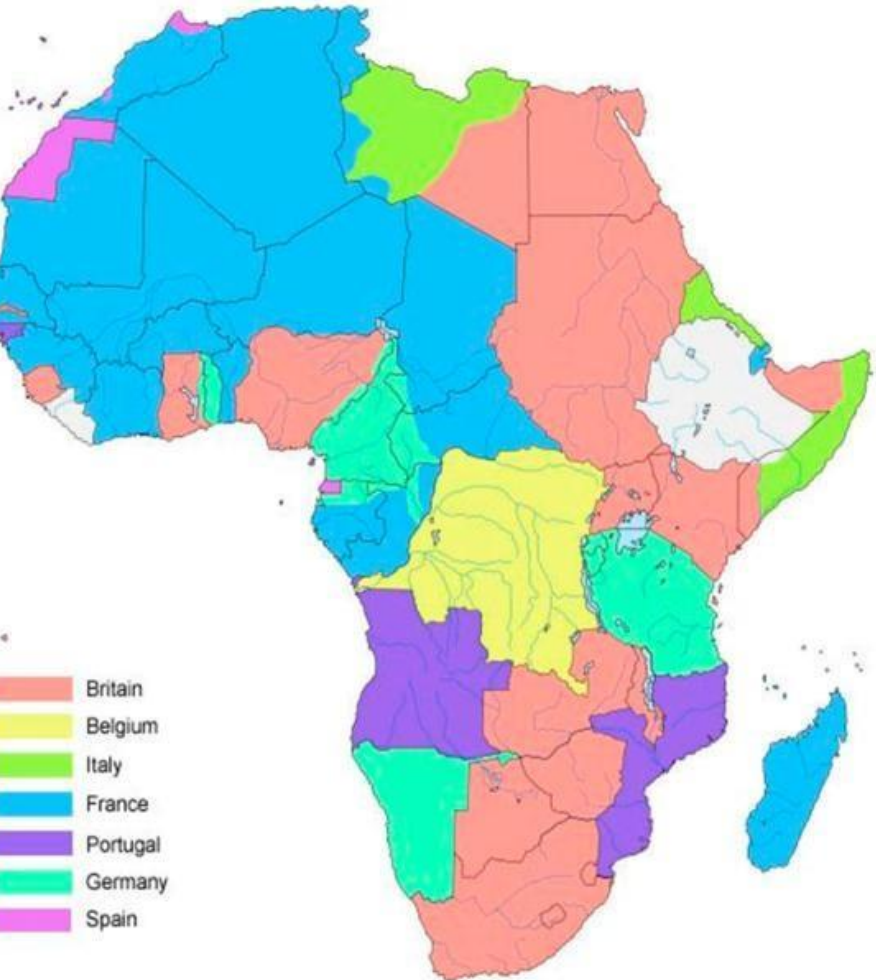
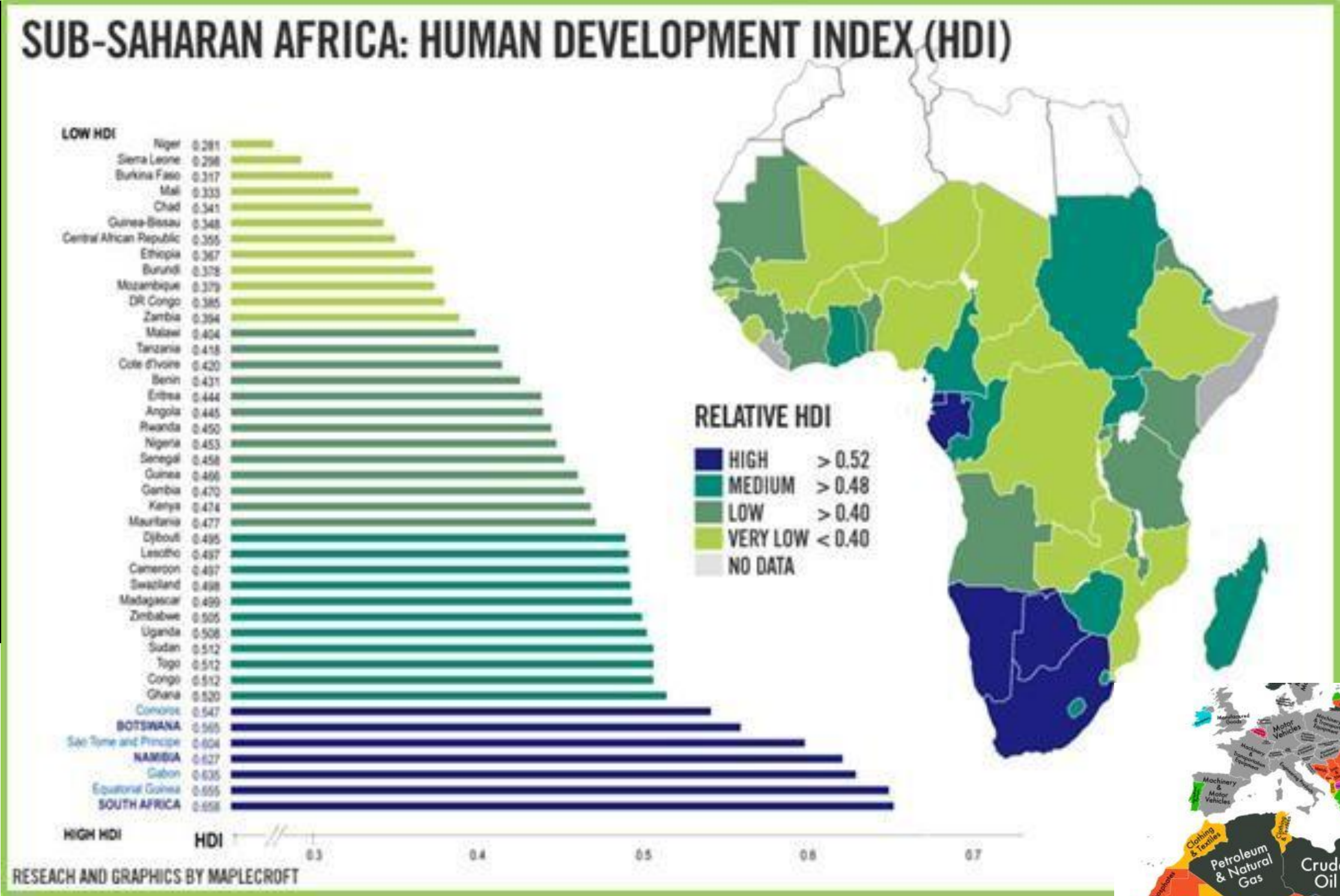


Green power against poverty

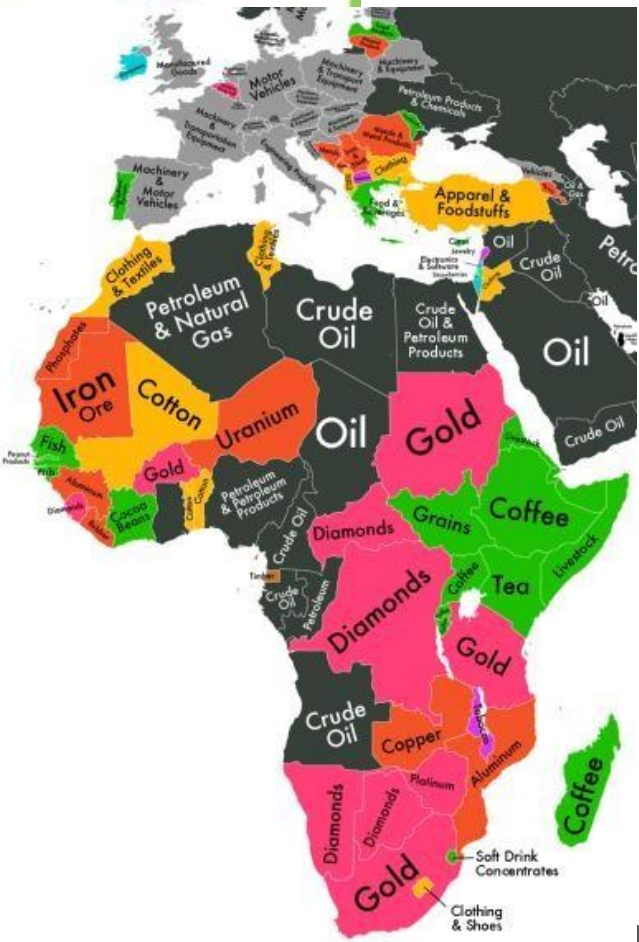


Africa – key facts population

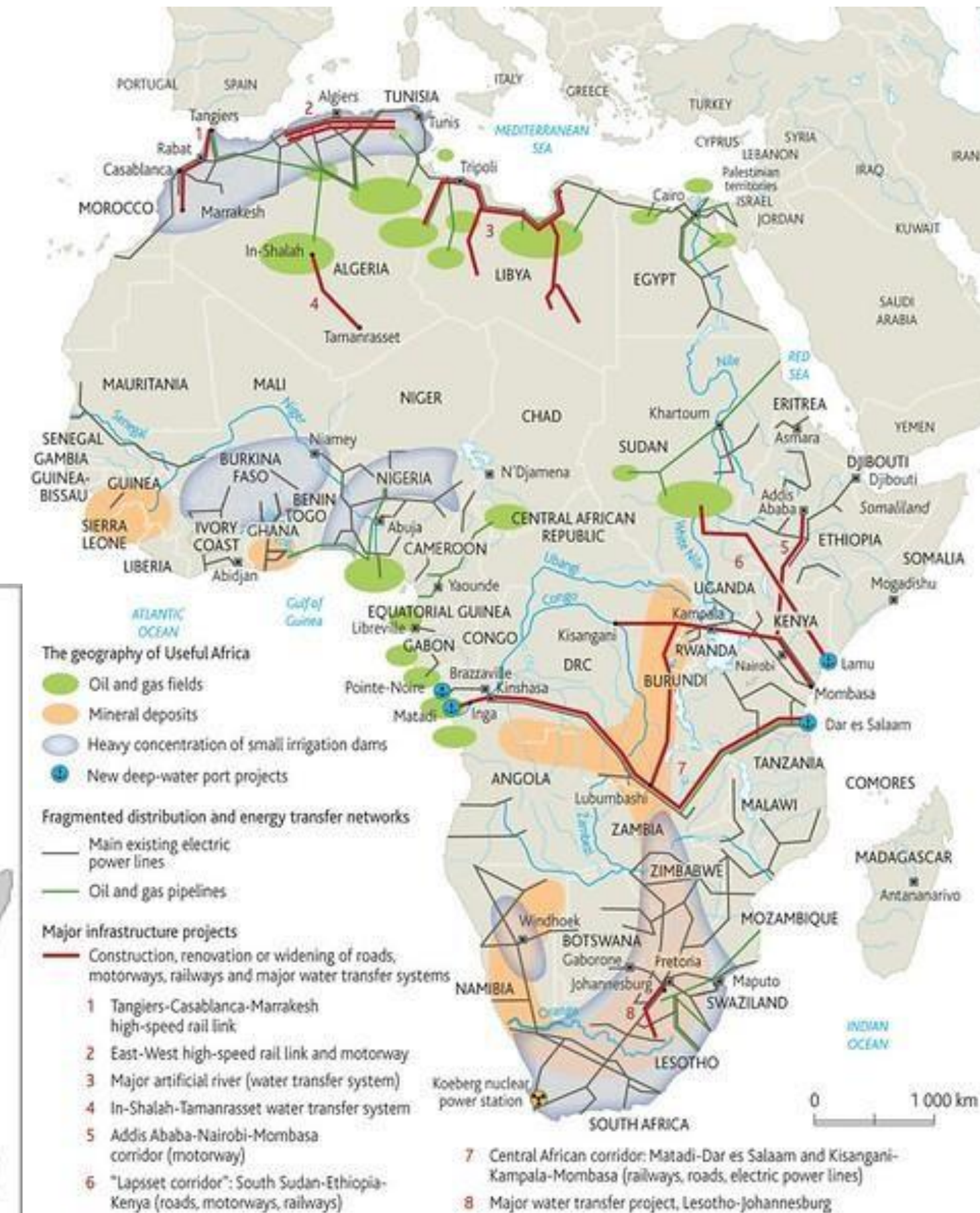
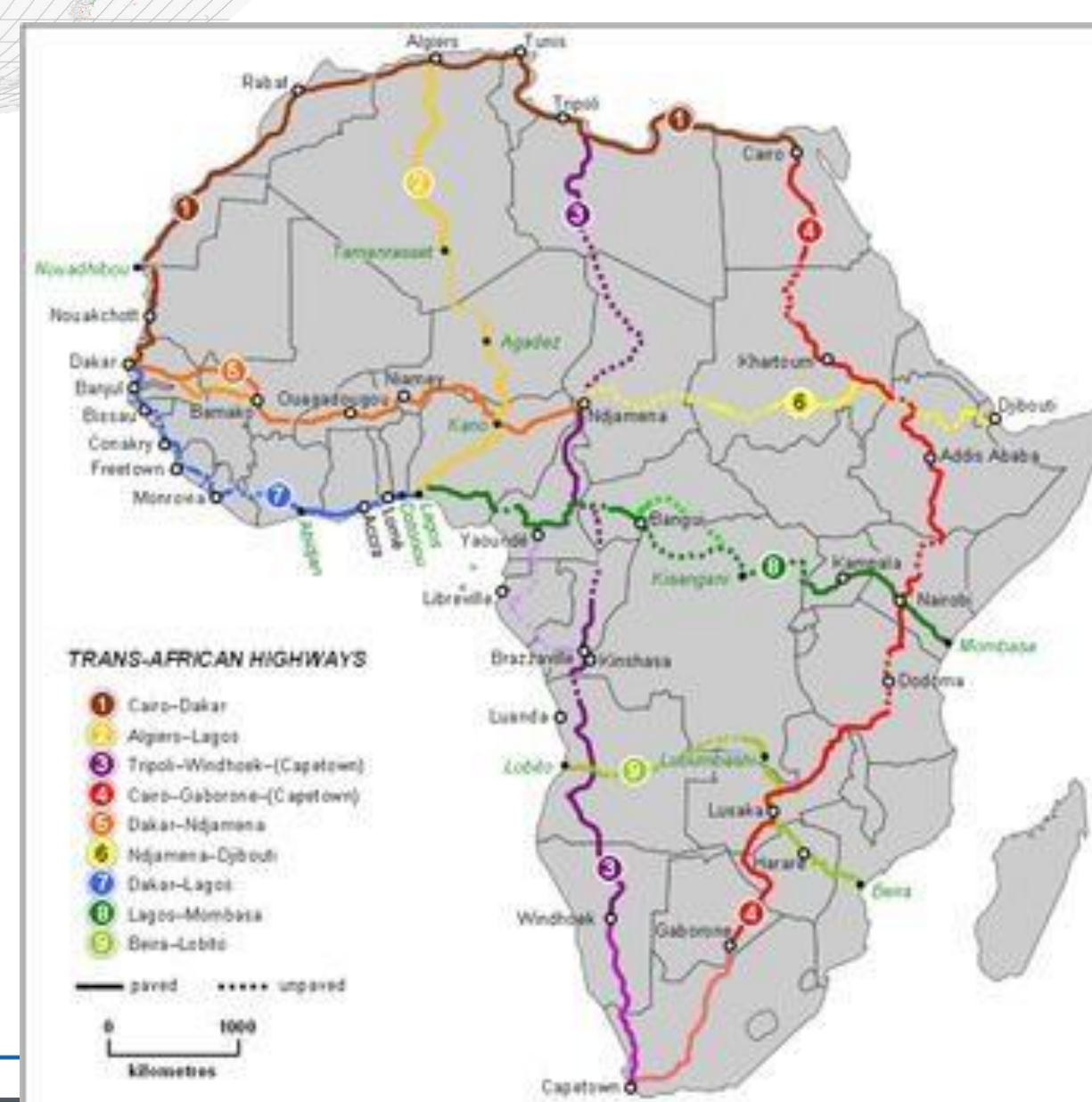
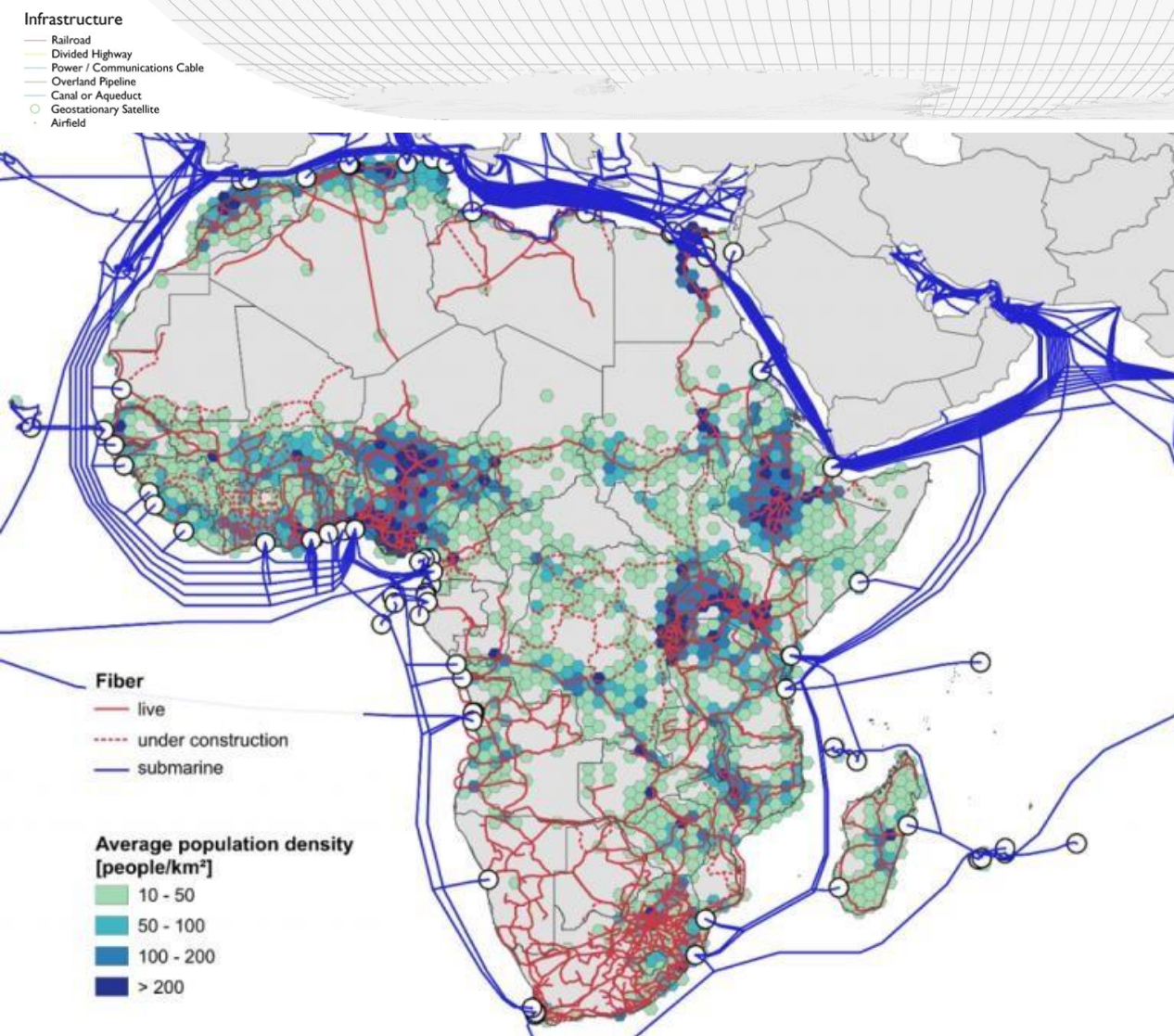
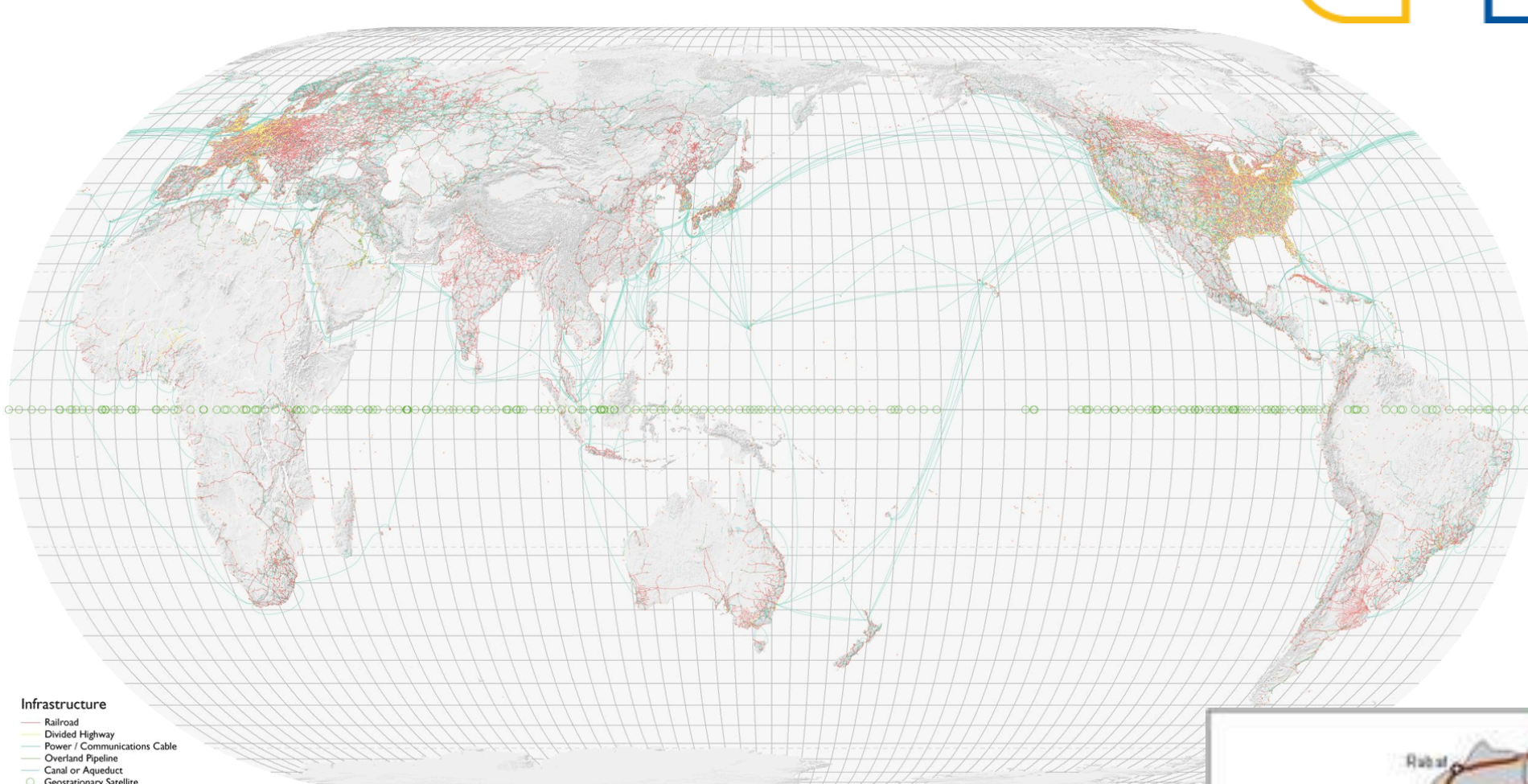
Region	Population M -2016	Yearly Change	Density (P/Km²)	Area M(Km²)	Med. Age	Urban Pop %	World Share
Eastern Africa	405,4	2.79 %	61	6,6	18	26%	5.5 %
Western Africa	362,8	2.71 %	60	6,0	18	45 %	4.9 %
Northern Africa	228,0	1.85 %	29	7,7	25	50 %	3.1 %
Middle Africa	156,5	3.02 %	24	6,4	17	42 %	2.1 %
Southern Africa	63,2	1%	24	2,6	25	60 %	0.9 %



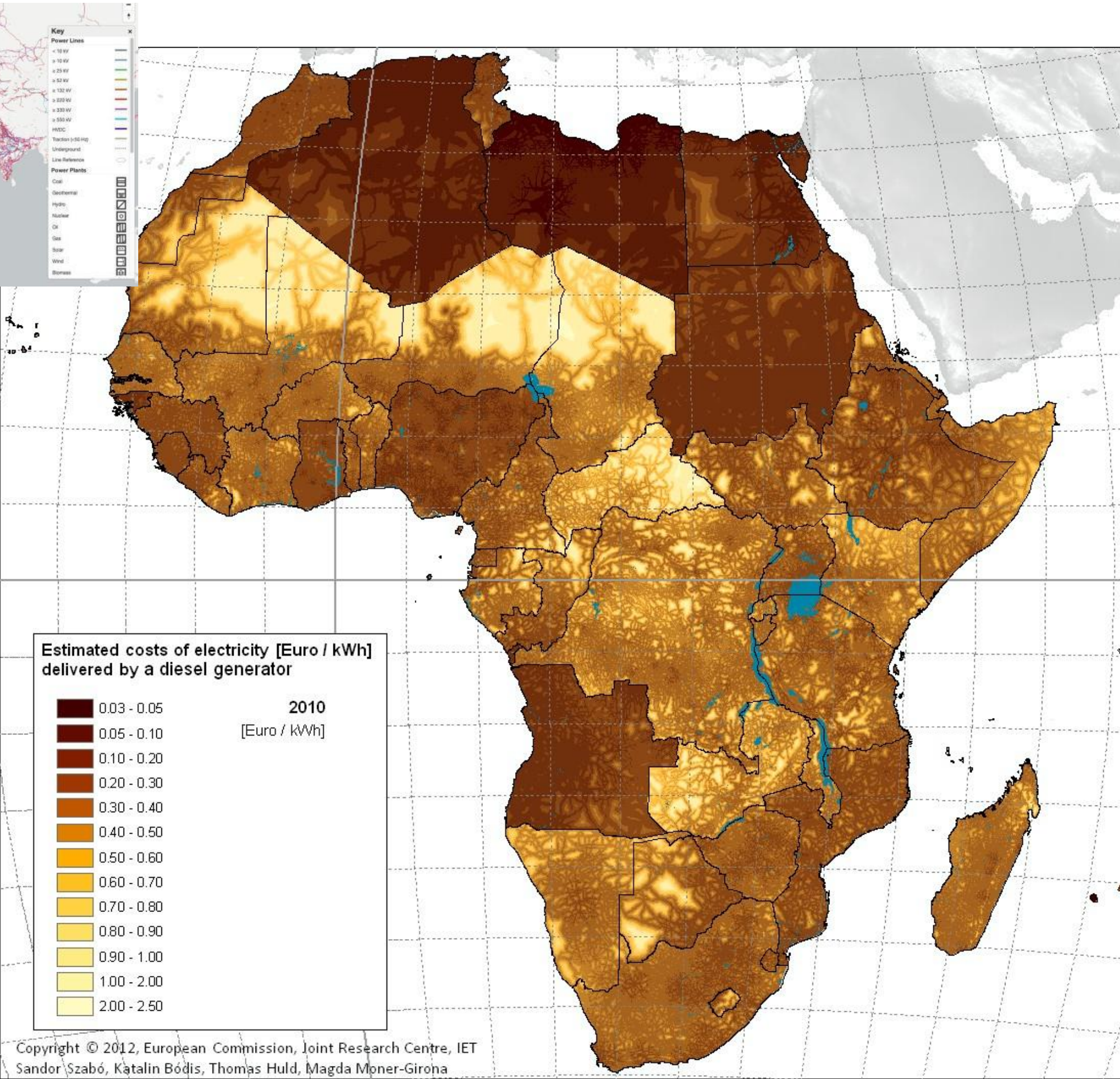
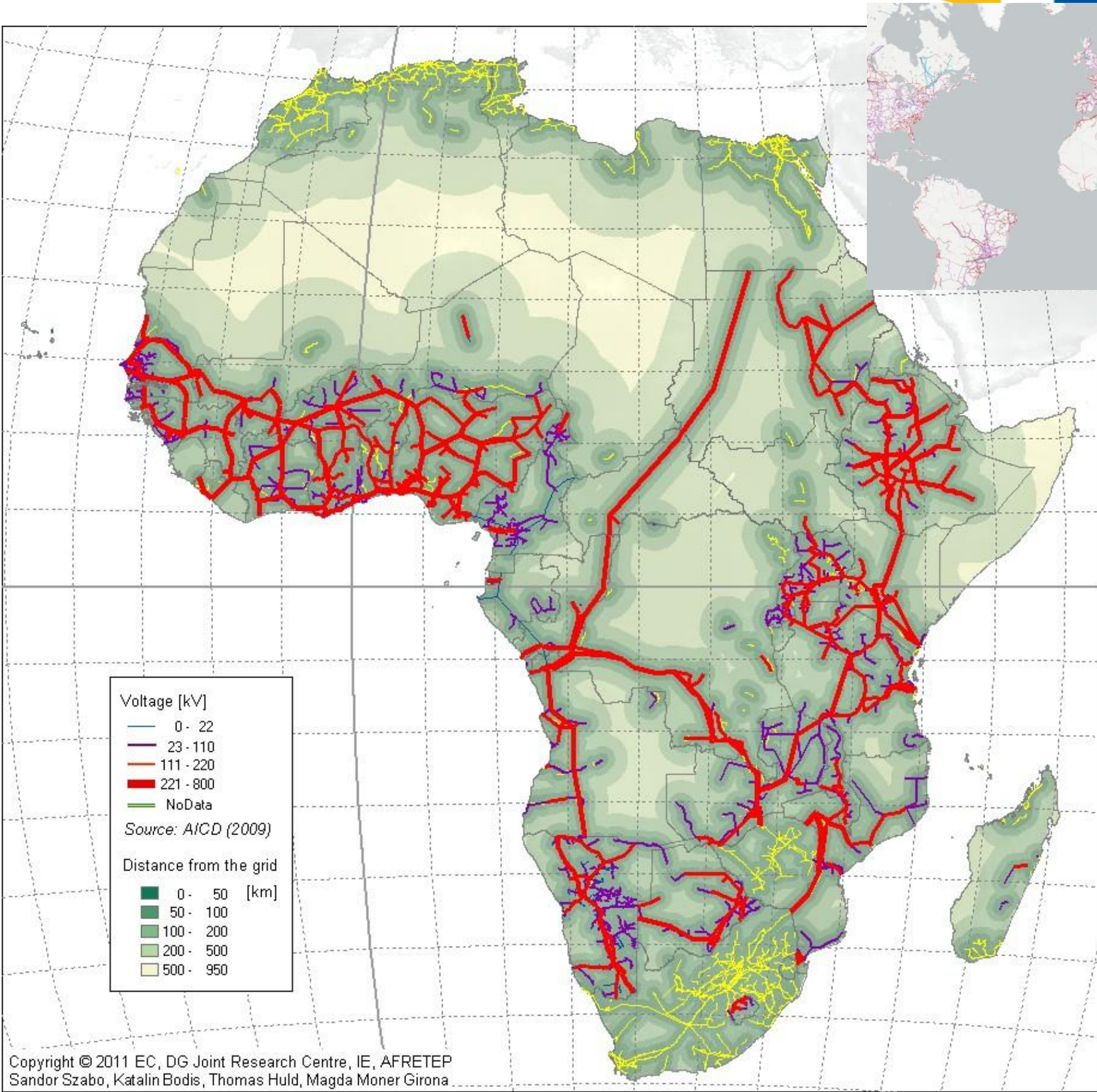
POPULATION / DEVELOPPEMENT



Africa – key facts INFRASTRUCTURE



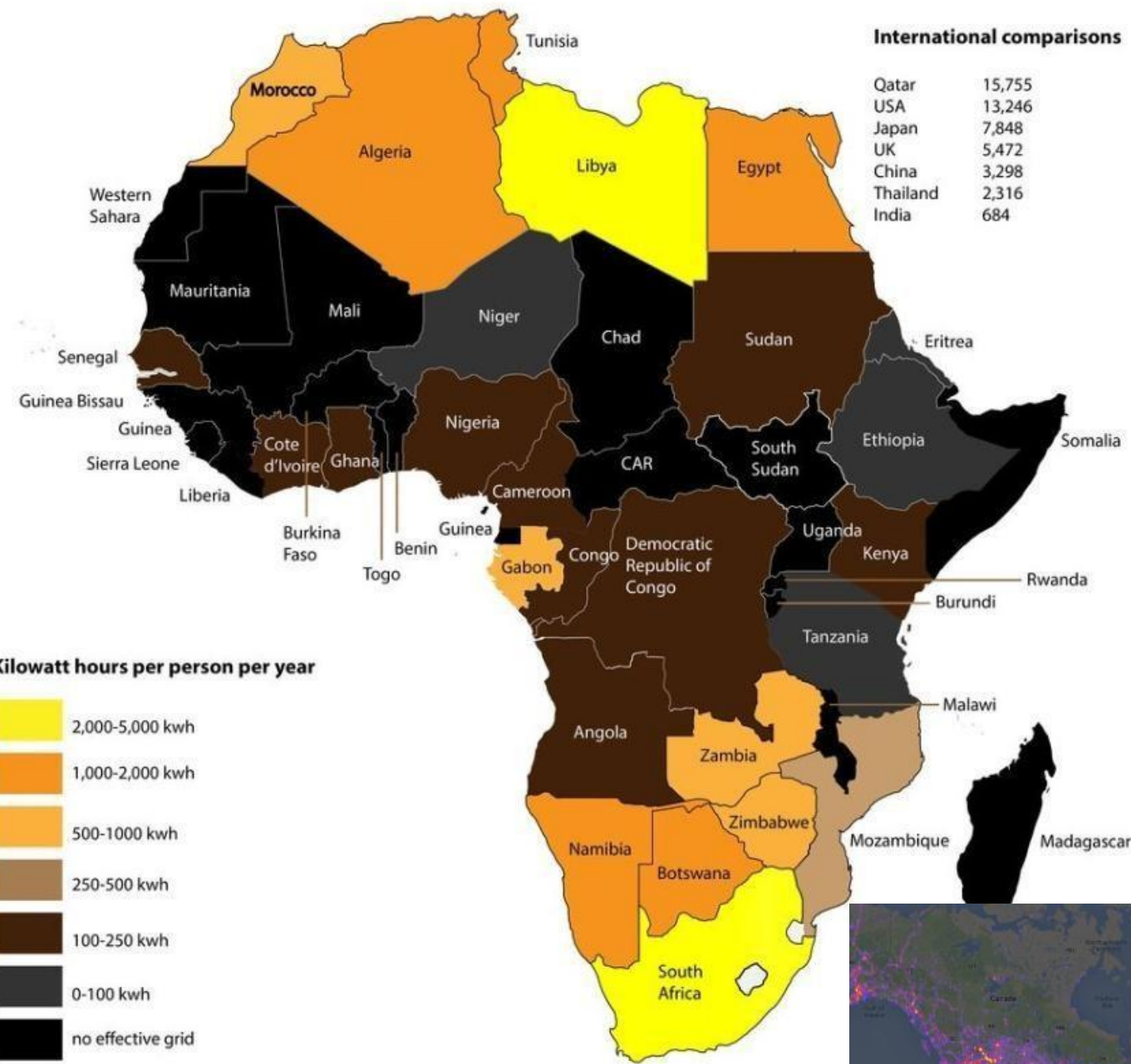
Africa – key facts power



Africa – key facts electricity access



Africa 2013
The Dark Continent



International comparisons

Qatar	15,755
USA	13,246
Japan	7,848
UK	5,472
China	3,298
Thailand	2,316
India	684

Share of Population with Electricity Access, and Rate of Electrification versus Population Growth

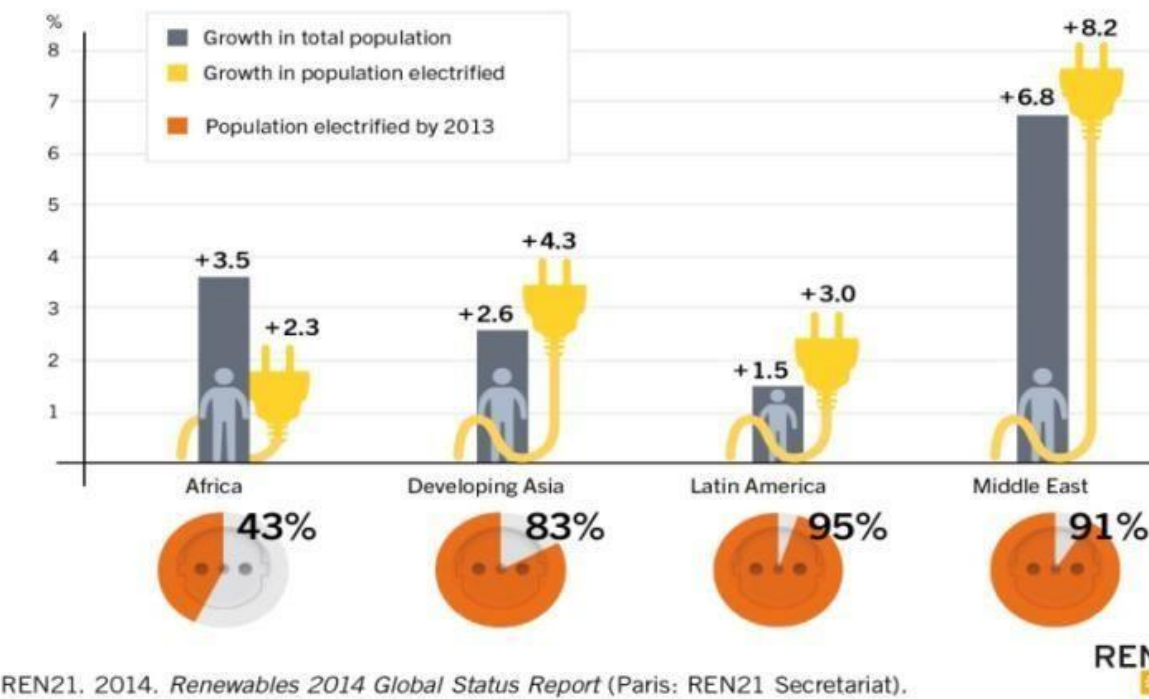
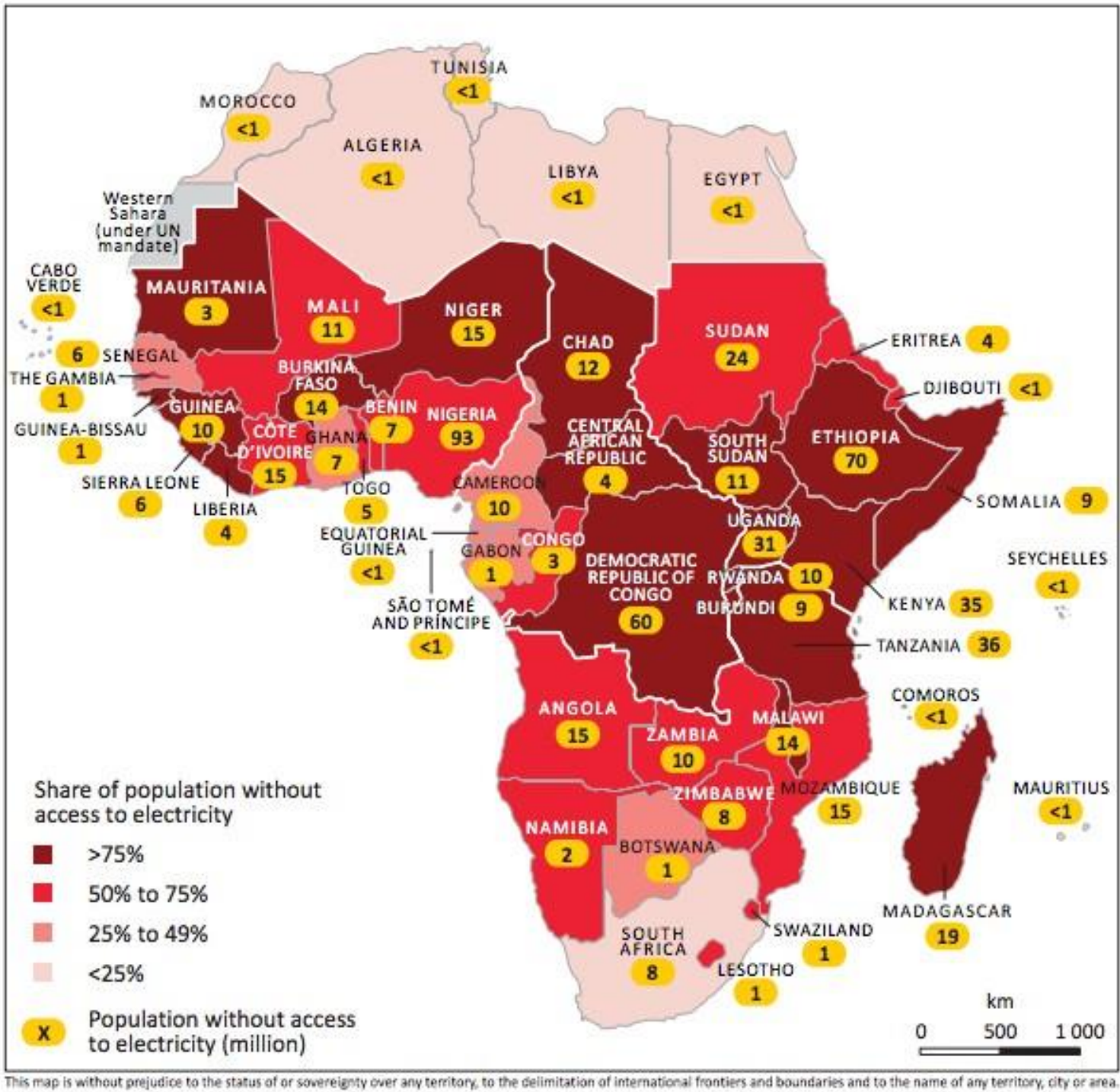


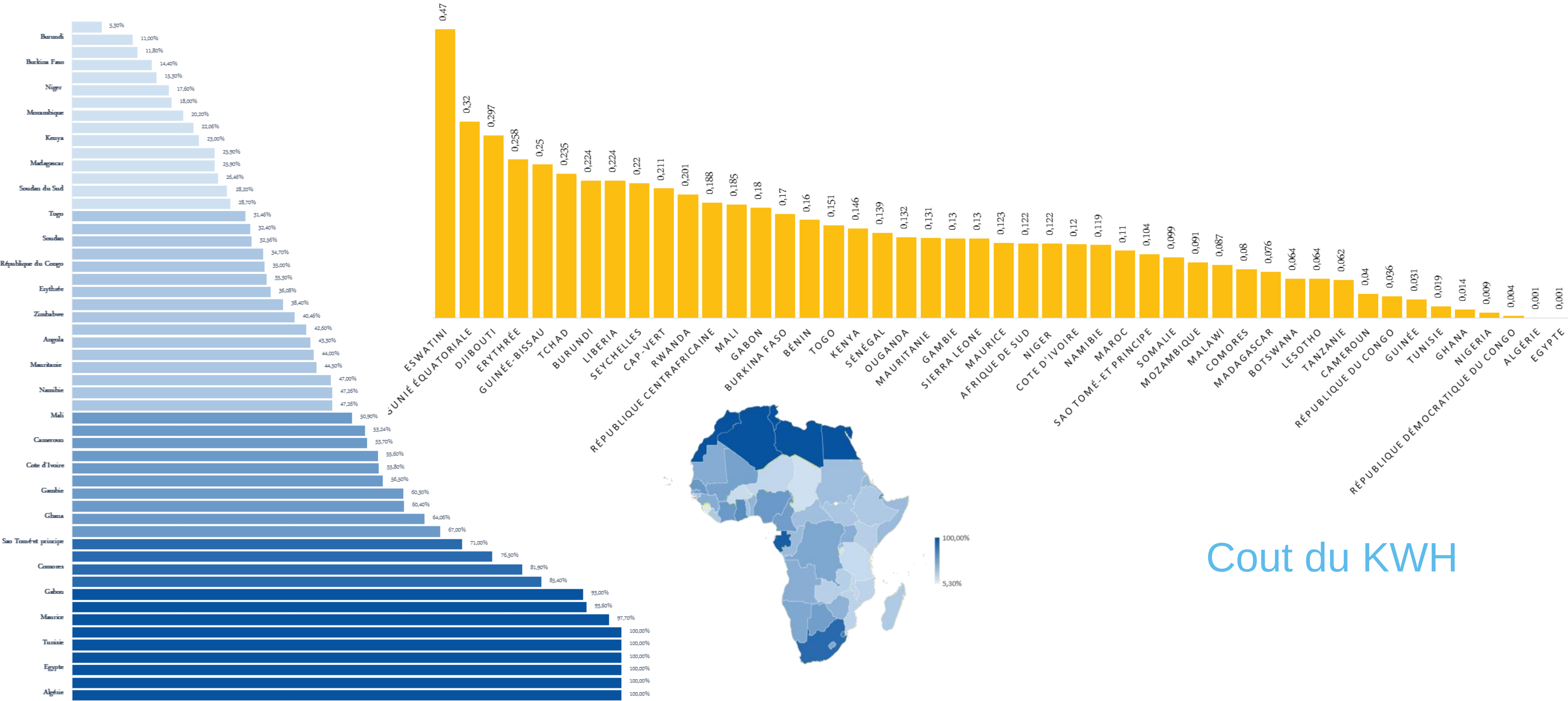
Figure 1.6 > Number and share of people without access to electricity by country, 2012



Taux d'électrification



Africa – key facts electricity access

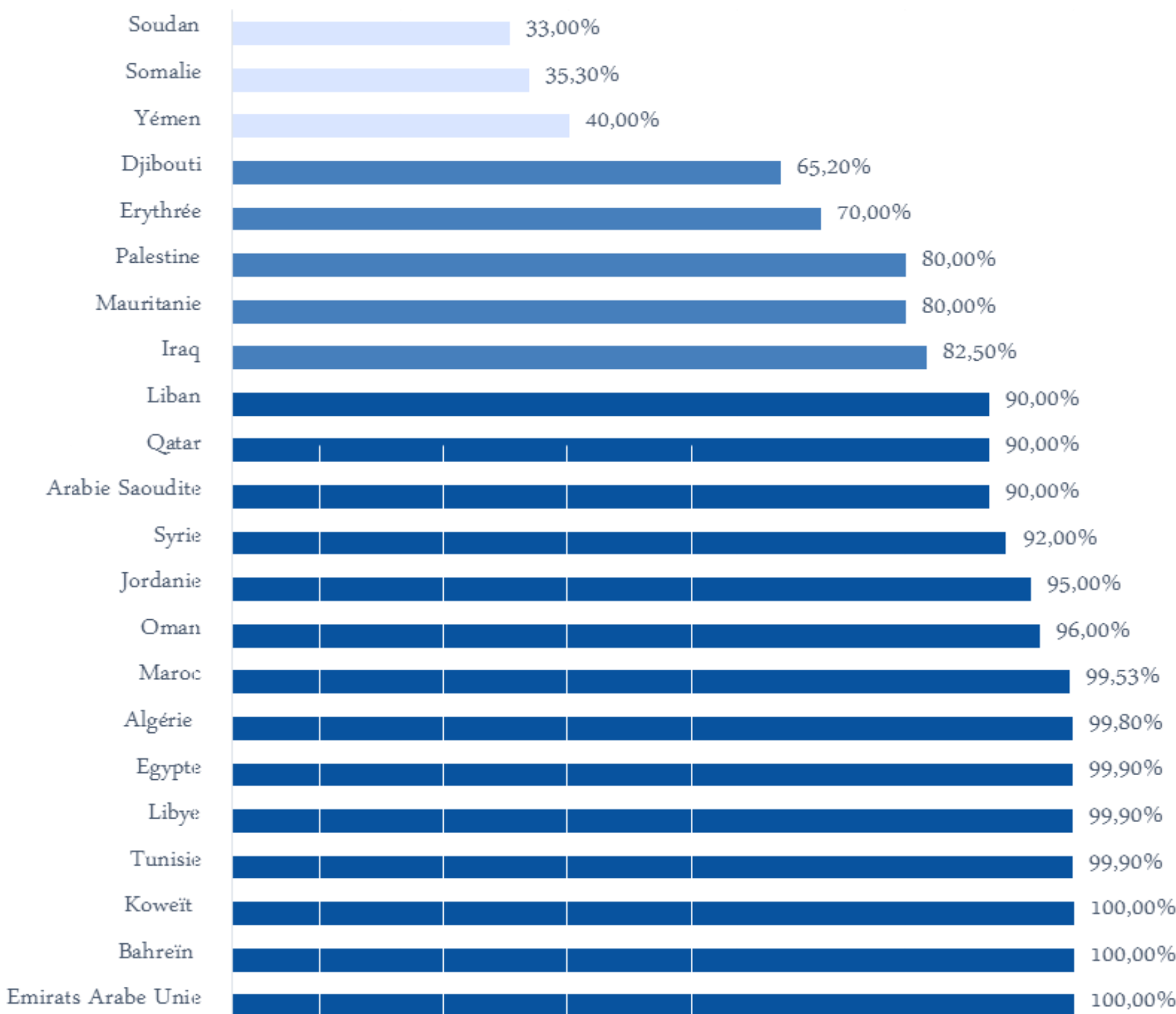
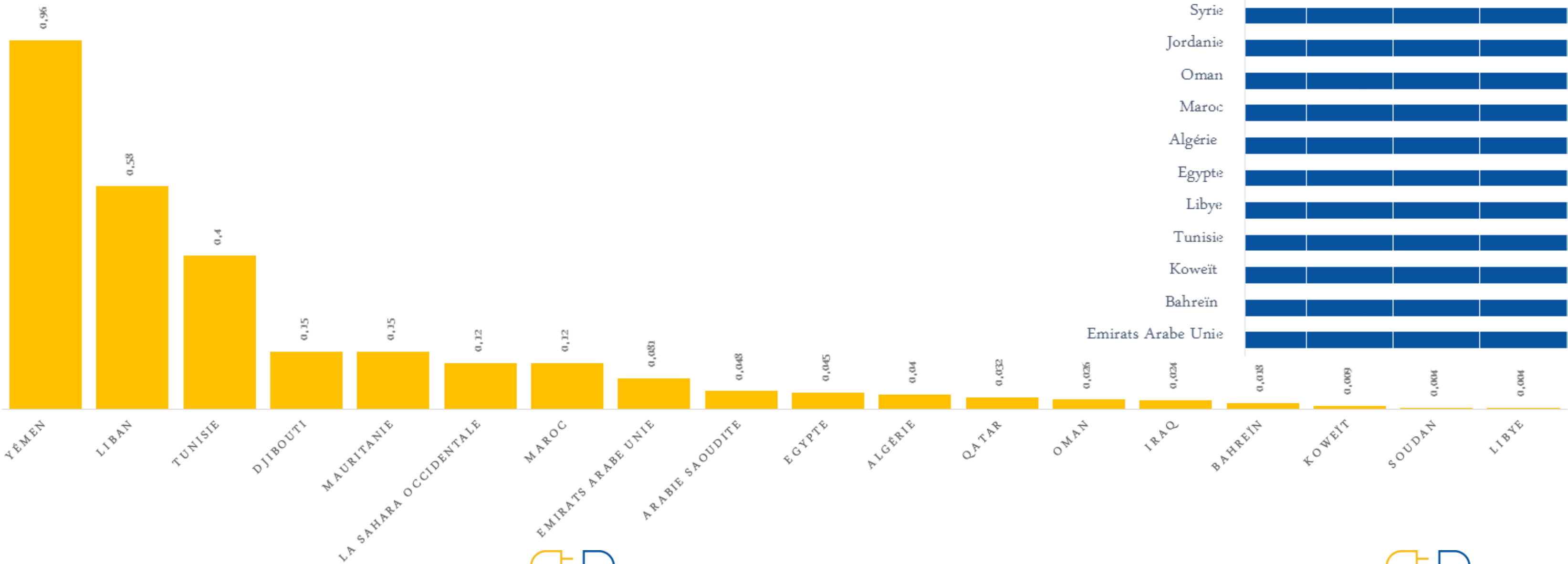


Cout du KWH



Africa – key facts electricity access

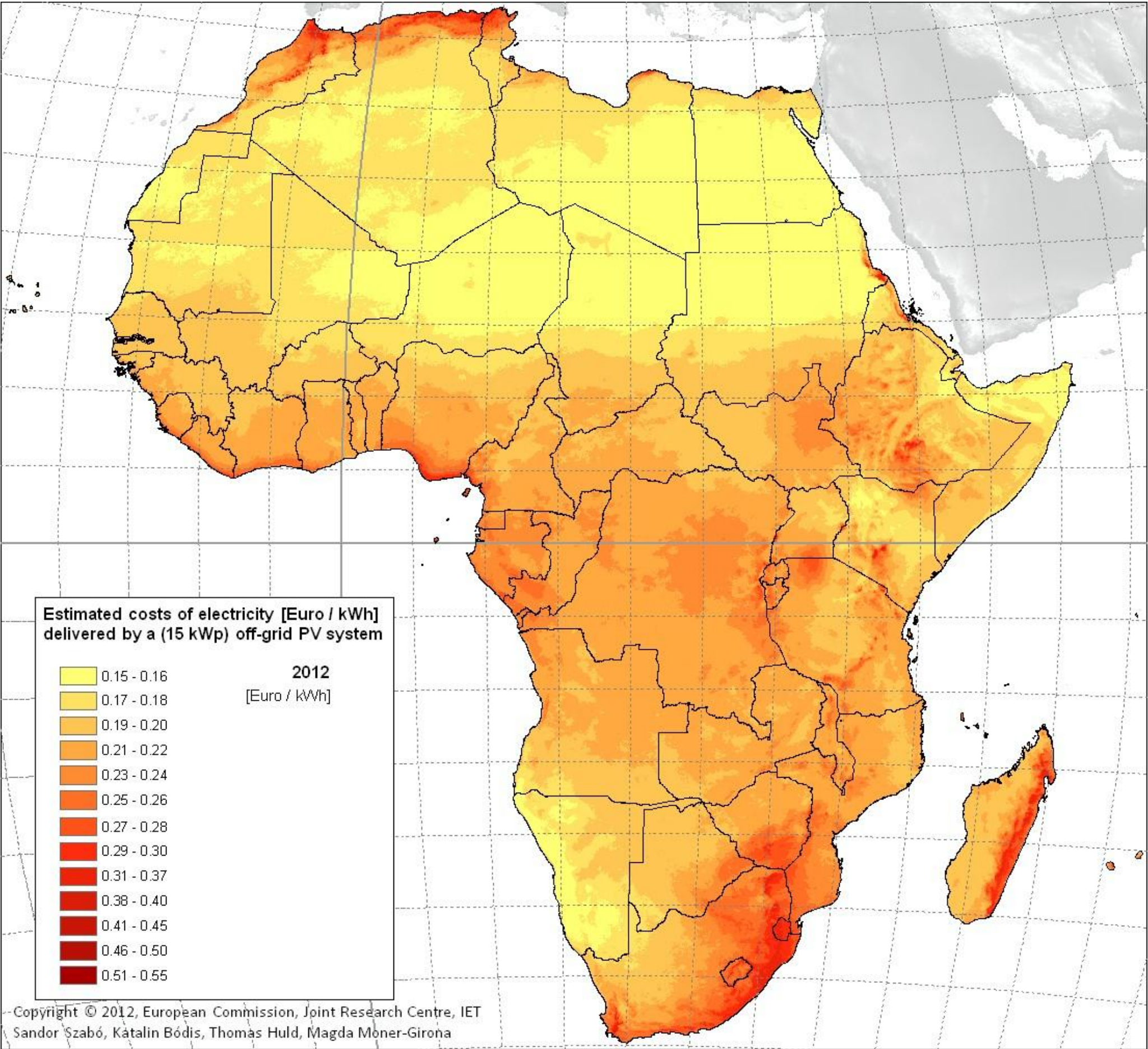
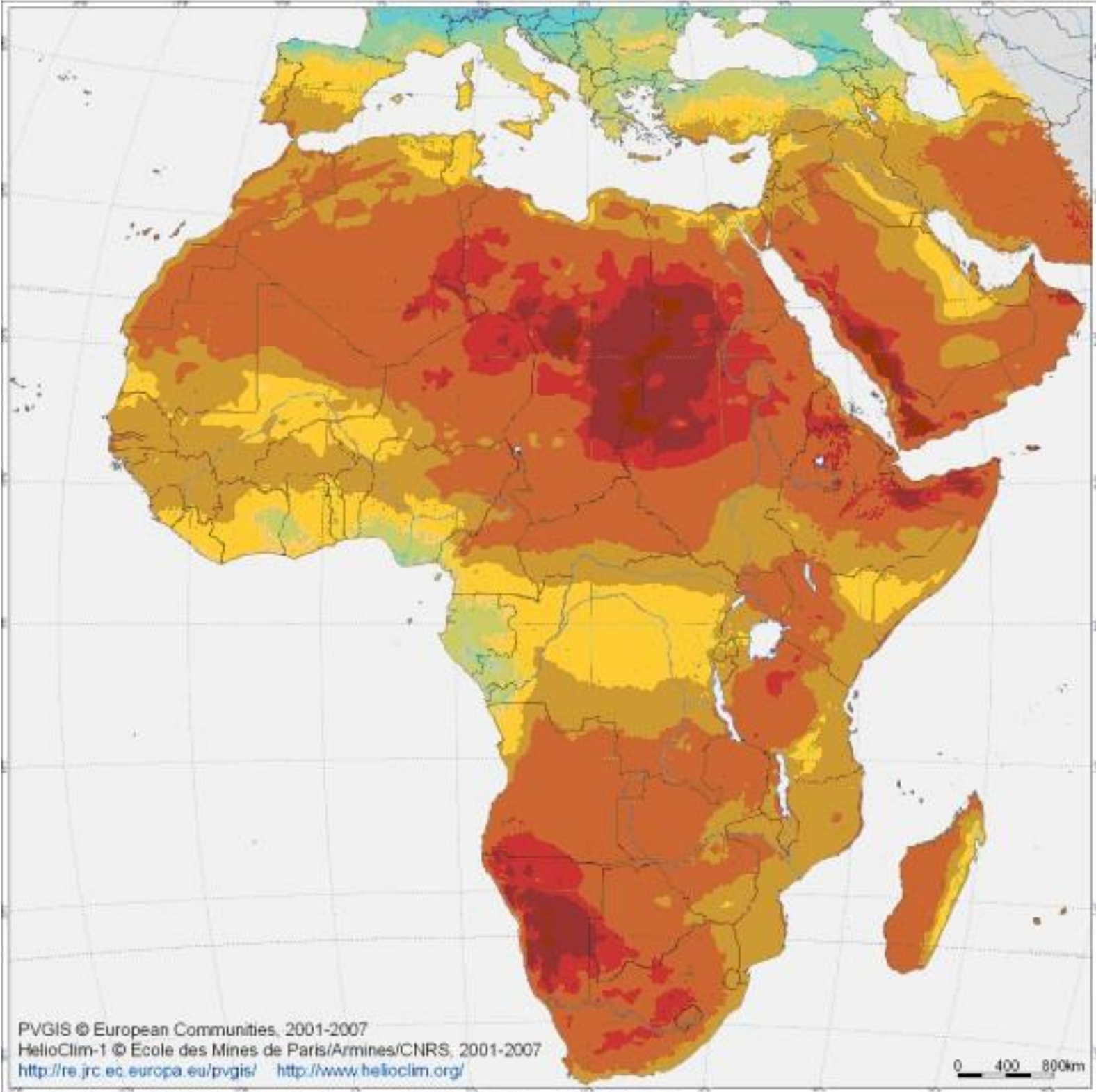
Besoins dans la region MENA



Africa – key facts solar energy

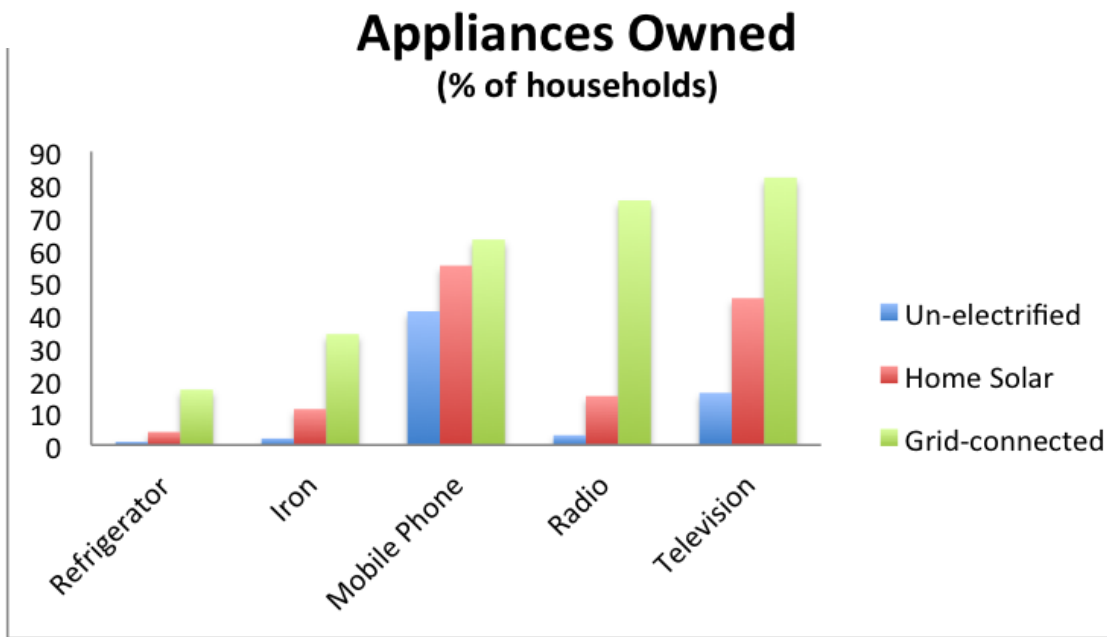
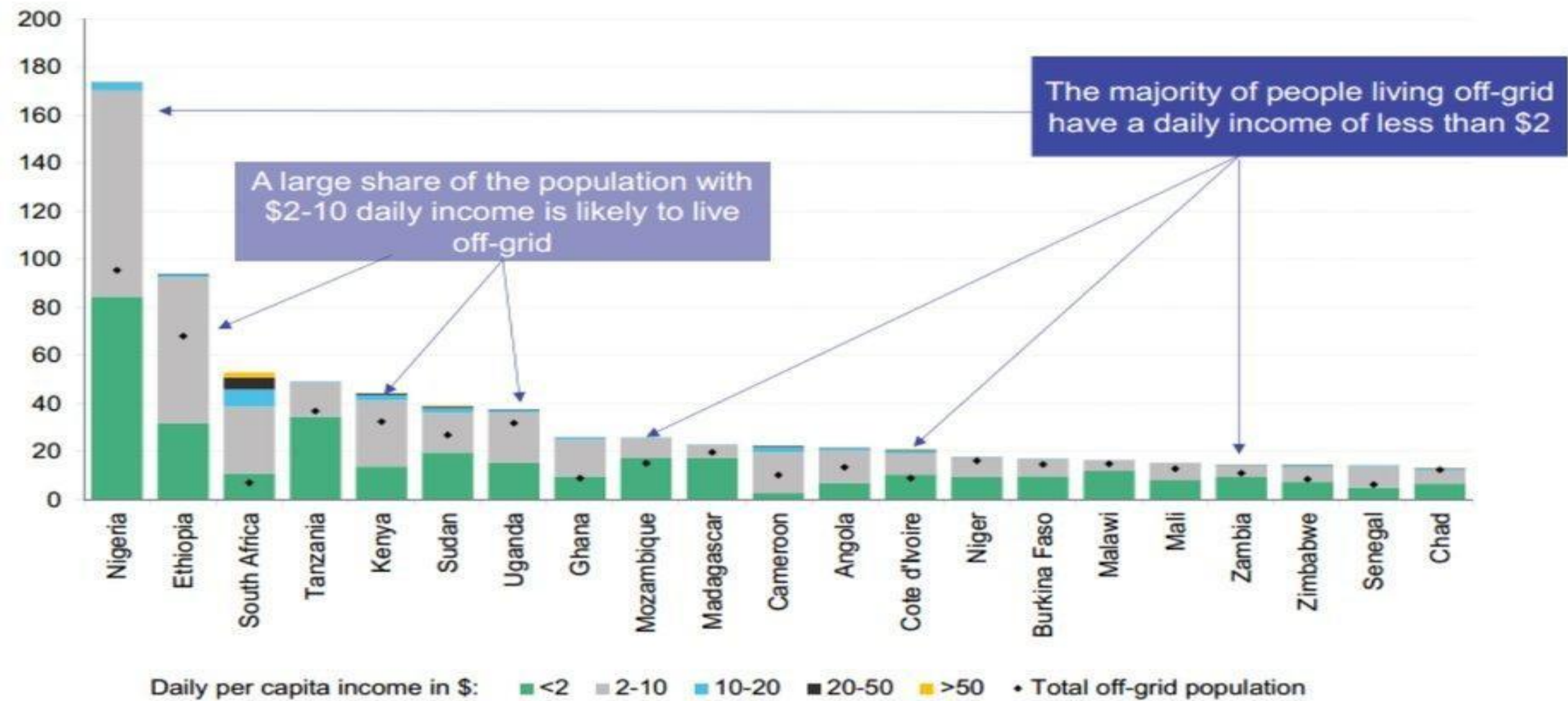


Photovoltaic Solar Electricity Potential
Mediterranean Basin, Africa, and Southwest Asia



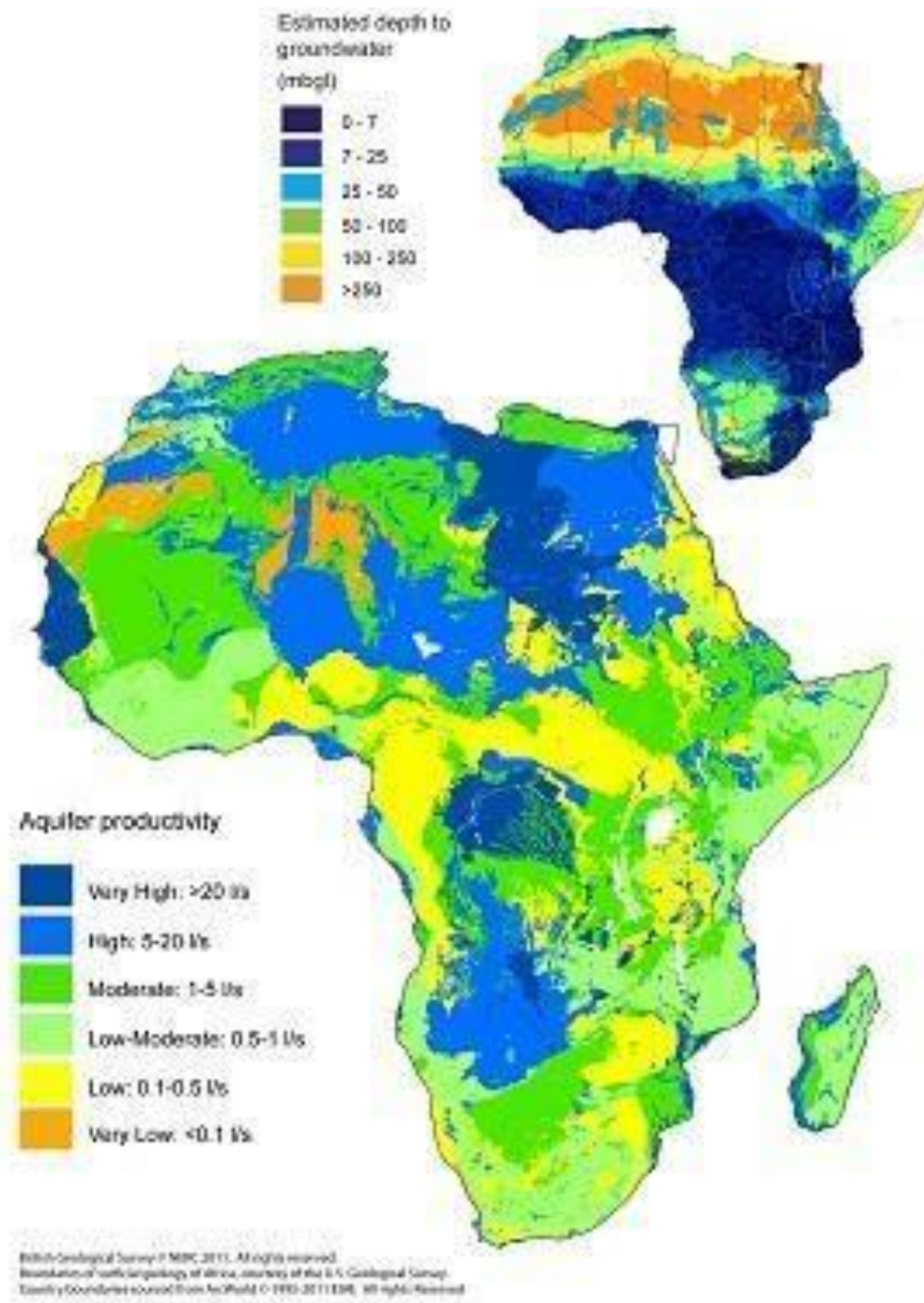
Africa – key facts Capita/Appliances

Figure 5: Population (in millions) by estimated per capita income

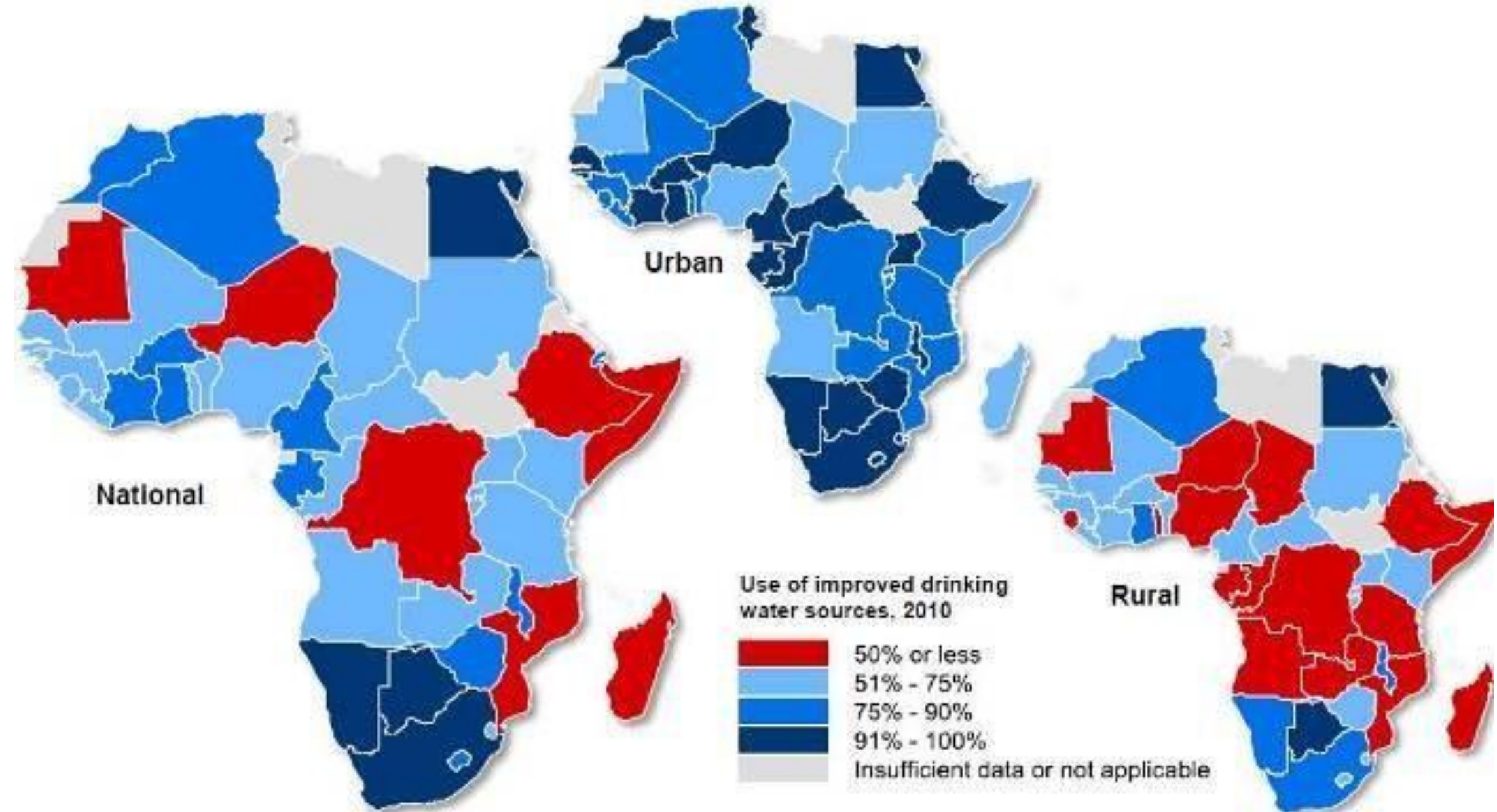


offre adaptée au revenu selon pays

Africa – key facts Water



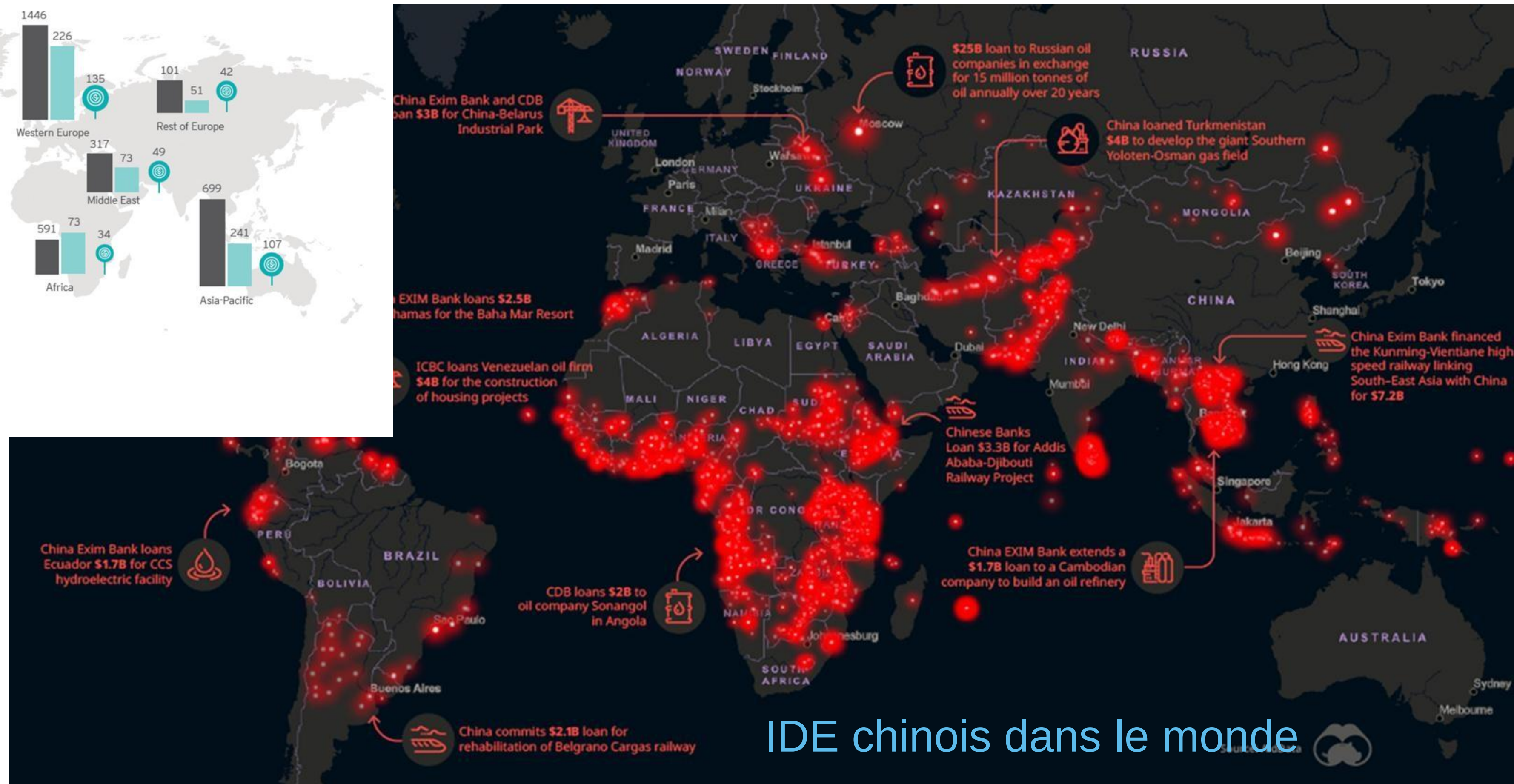
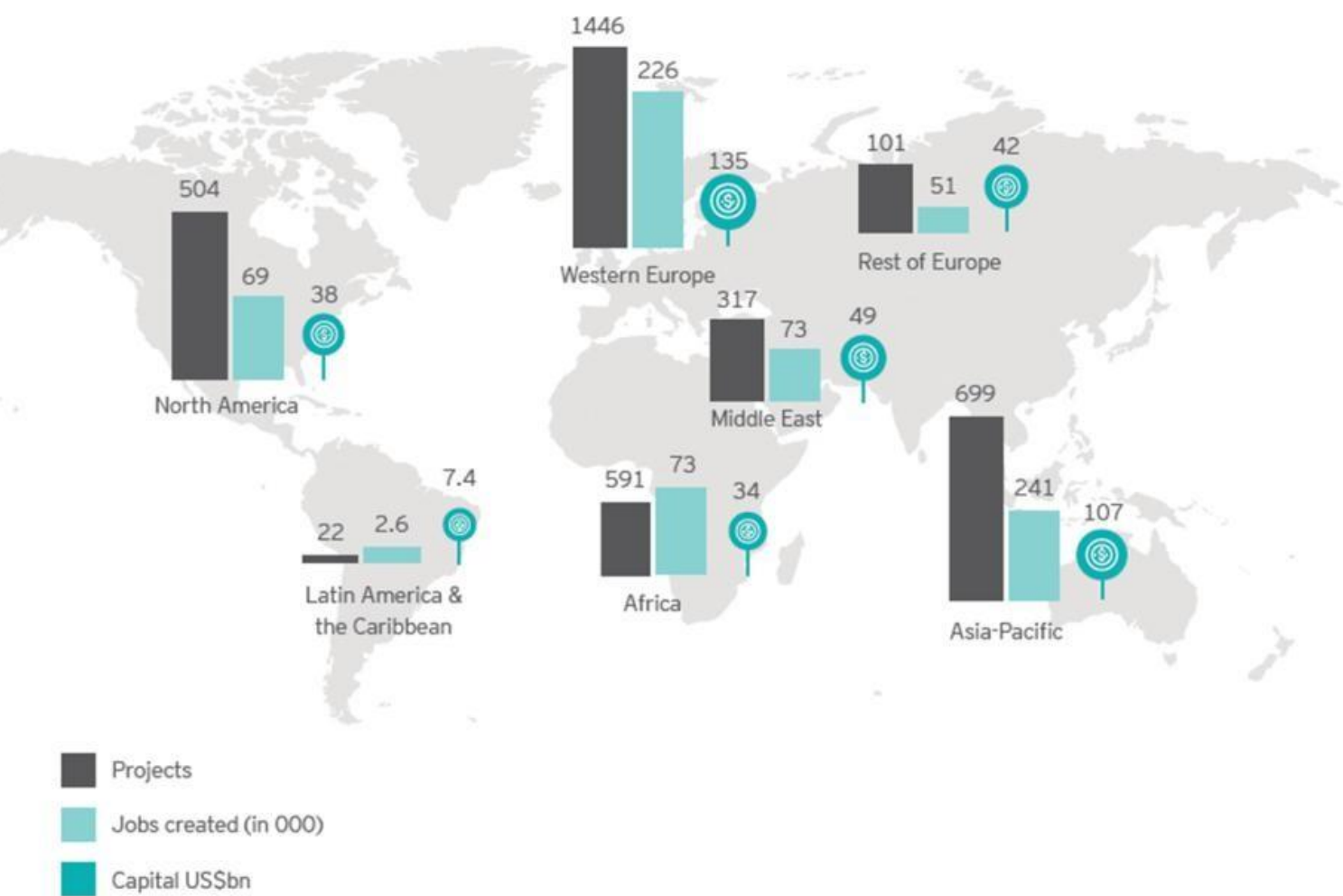
In seven countries in sub-Saharan Africa less than half of the population uses an improved drinking water source; rural drinking water coverage lags far behind urban drinking water coverage



Besoins d'énergie pour le secteur de l'eau

Africa – key facts attractiveness

Key investors by region FDI 2014 - 2018



IDE chinois dans le monde

Africa – key facts attractiveness



Country	Projects	Jobs created	Capital US\$m
USA	463	62 004	30 855
France	329	57 970	34 172
UK	286	40 949	17 768
China	259	137 028	72 235
South Africa	199	21 486	10 185
UAE	189	39 479	25 278
Germany	180	31 562	6 887
Switzerland	143	13 363	6 432
India	134	30 334	5 403
Spain	119	13 837	4 389

Source: FDI Intelligence, EY analysis

China is now Africa's biggest economic partner.

	Goods trade, 2015, \$ billion	FDI stock, 2014E, ¹ \$ billion	FDI growth, 2010–14, ² %	Aid, 2015, ³ \$ billion	Infrastructure financing, 2015 \$ billion
1 China	188	United States 79	China 25	United States 10 ⁴	China 21
2 India	59	United Kingdom 71	South Africa 13	United Arab Emirates 7	France 3
3 France	57	France 70	United Kingdom 11	China 6	Japan 2
4 United States	53	China 32	United States 10	United Kingdom 6	Germany 1
5 Germany	46	South Africa 30	France 6	Germany 4	India 1
China ranks	#1	#4	#1	#3	#1

¹ Estimated according to compound annual growth rate (CAGR) from 2009 to 2012.

² For countries other than China, we made projections using historical data.

³ Office of Development Assistance (ODA) and Other Official Flows (OOF), 2015 for Organisation for Economic Co-operation and Development (OECD) countries, 2012 for China.

⁴ According to United States Agency for International Development data, US foreign aid to Africa was \$11.9 billion in fiscal year 2015 and \$7.4 billion in fiscal year 2016. The discrepancy with OECD data shown here is likely due to the fact that US fiscal years start in October, whereas OECD data is for

South Africa leads in FDI projects, with Egypt taking a clear lead in capital investments and jobs

FDI:15 largest recipients

Country	Jobs 000	Capital US\$bn	Projects
Egypt	32	12	91
South Africa	12	5	110
Morocco	15	5	71
Nigeria	10	8	65
Kenya	6	2	64
Ethiopia	16	7	29
Ghana	7	1	30
Algeria	10	9	18
Cote d'Ivoire	4	2	30
Zimbabwe	6	6	18
Tunisia	10	1	19
Uganda	6	0	17
Tanzania	3	1	19
Mozambique	1	2	15
Zambia	2	1	15

Source: FDI Intelligence, EY analysis

Importance des IDE en Afrique



Africa – key facts attractiveness



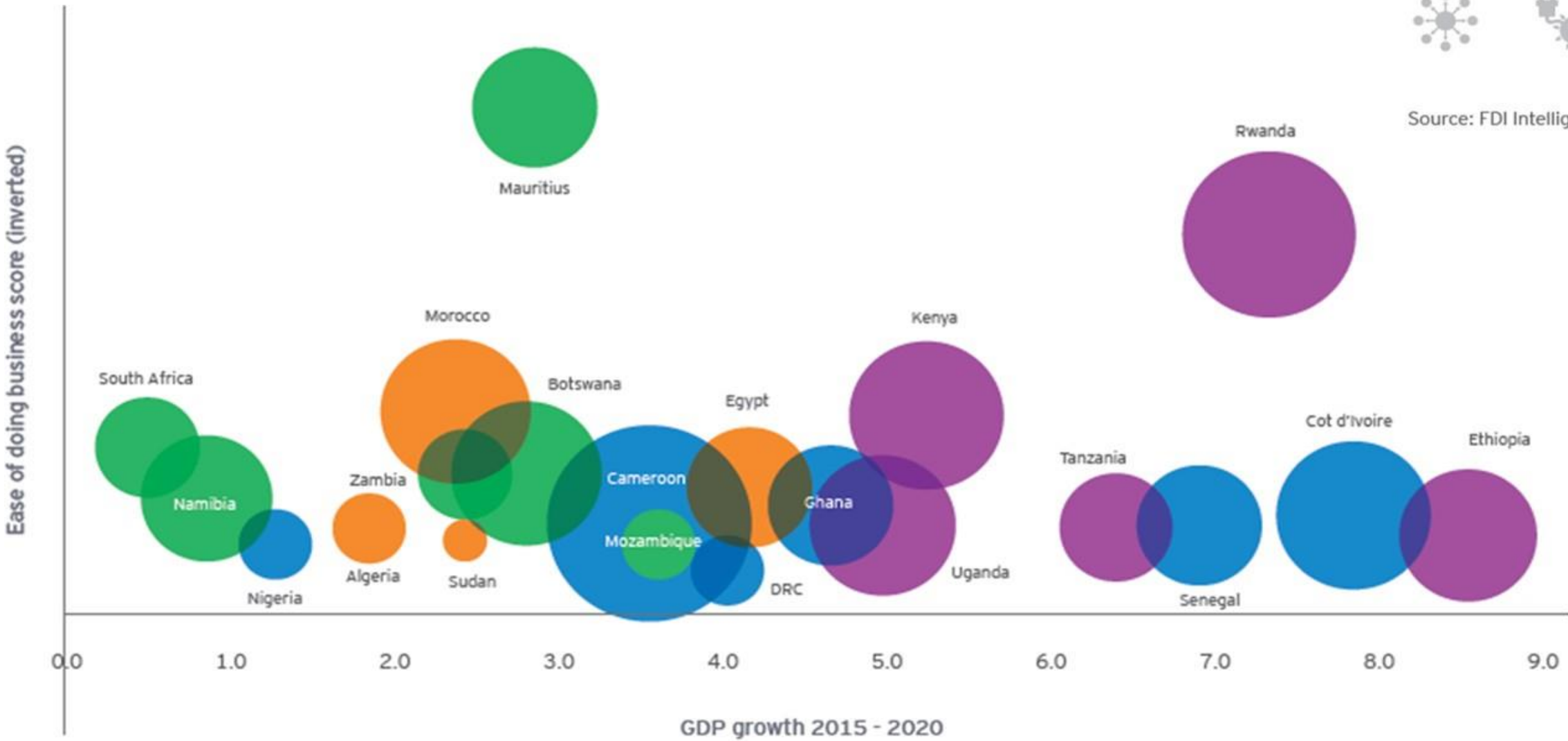
FDI projects by sector: 2018 Total projects 710



Influence des IDE sur le produit intérieur brut

Most African countries score weakly in the EoDB rankings

Ratio of GDP growth to Ease of Doing Business



Source: FDI Intelligence, EY analysis

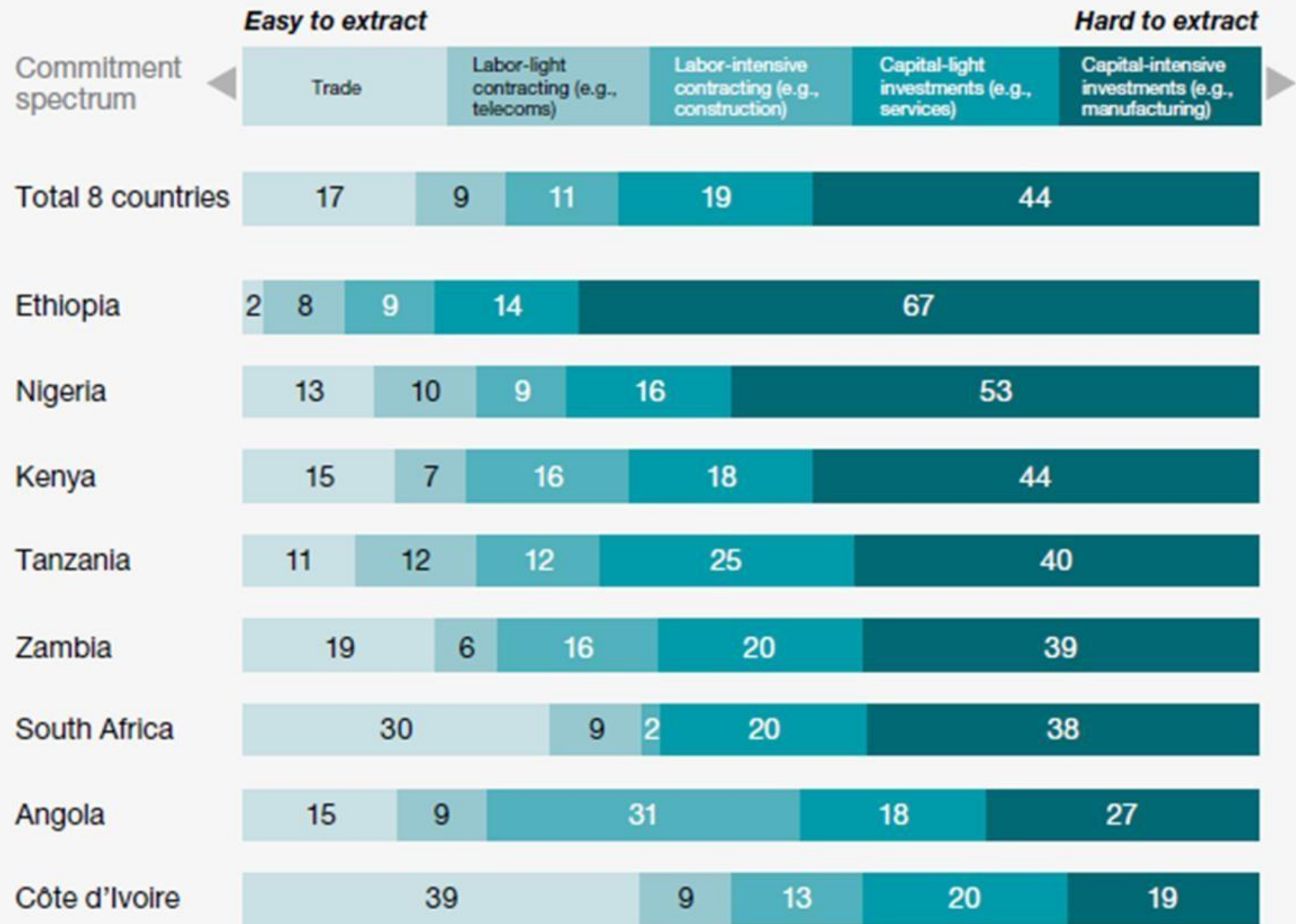
Size of bubble indicates FDI score to GDP
Source: Oxford Economics, FDI Intelligence, EY analysis



Africa – key facts attractiveness

More than 40 percent of Chinese firms are in industries with a high number of long-term commitments in sub-Saharan Africa.

Commitment level, % of firms

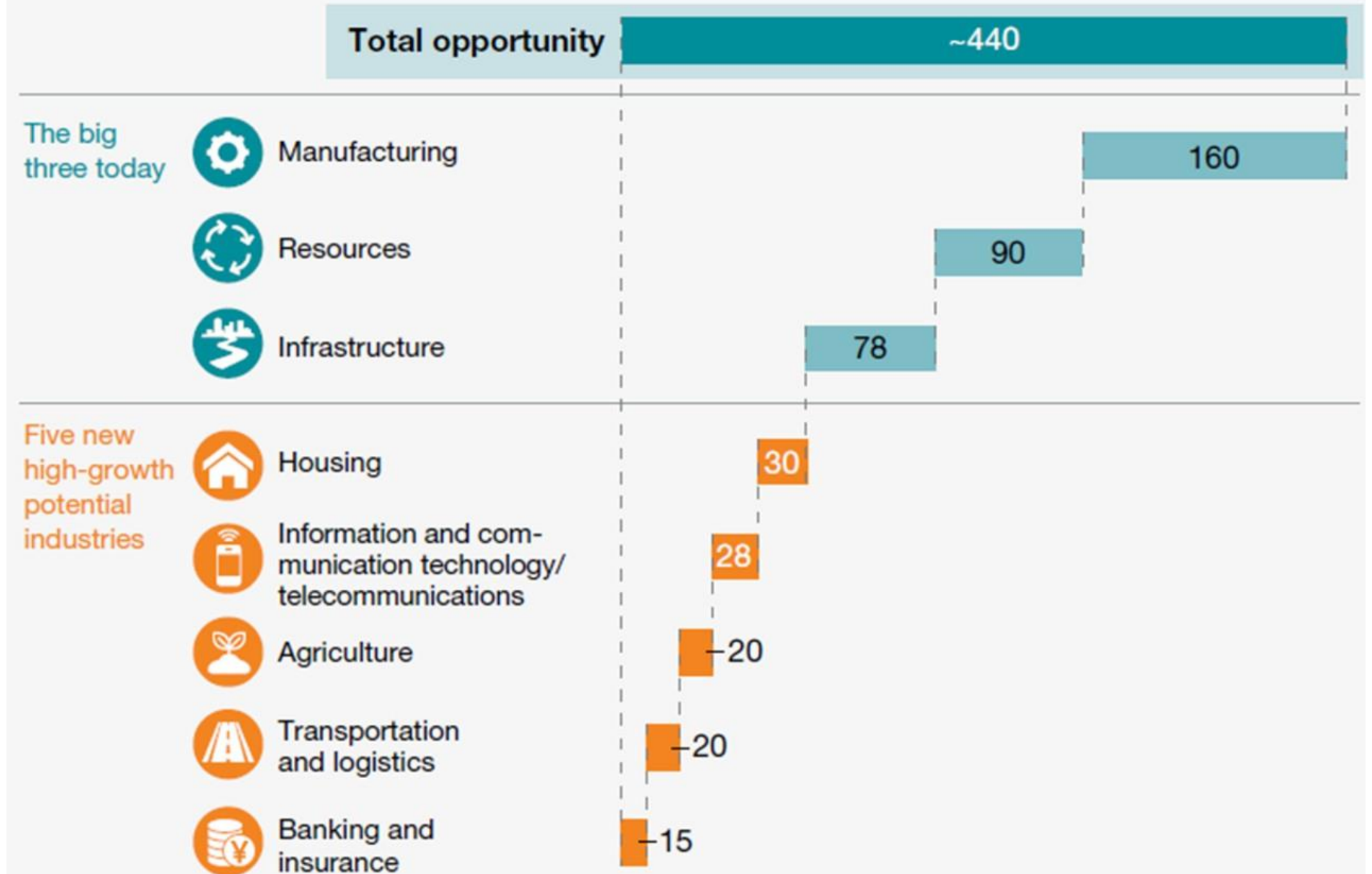


NOTE: Figures may not sum due to rounding.

SOURCE: McKinsey field survey of Chinese firms in eight African countries; Registration lists of Chinese firms with overseas investments, Ministry of Commerce of the People's Republic of China, 2015

In the “accelerated growth” scenario, Chinese firms could realize \$440 billion in revenue growth by 2025.

\$ billion



NOTE: Numbers may not sum due to rounding.

SOURCE: *Lions on the move II: Realizing the potential of Africa's economies*, McKinsey Global Institute, 2016; “Infrastructure

Investissement Durable

PERSPECTIVES

Africa – key facts Solar center



- Solar-powered autonomous business center to empowering the rural off-grid communities with low income.
- Solar power to provide rural off-grid communities with sustainable energy and energy-related products and services such as lighting, battery charging, communication, refrigeration, TV club, water, banking, sell power, printer, computer, internet, ice,
- A powerful and sustainable energy supply unit in off-grid areas allows many people the use of small electrical appliances, meets people's needs and opens up various business opportunities, start with small solar shop, and finish with solar mini grid.
- With growing network , SOLAR center stepped to capture the market opportunity by providing affordable, clean and safe solar products, as well as energy for productive use to off-grid .



Programmes

MY HOME AFRICA



ADVANTAGES.

TECHNOLOGIES.

Photovoltaic (PV) solutions.

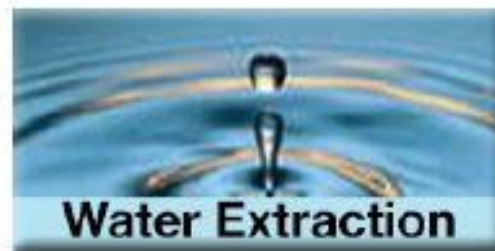


Illumination (LED) of House.

Of School. Of Hospital

Cooling. Air conditioning.

Hating. Warm water. Warm house. Internet.
Satellite Communication off grid



Water Extraction

Water
extraction.

Agriculture.

Food-, textile-, leather- Industries.



PRODUCTION. Local Assembling.

JOBS.

← **AFRICA** MY HOME, MY EDUCATION, MY JOB, - IT ALL BEGINS WITH...**ENERGY.**



Presentation of Investment Project:
Green - Energy Generation - Photovoltaic Fields in AFRICA.
Indicative scheme of cooperation.

INVESTMENT PROJECT

GREEN ENERGY = SOLAR ENERGY. FOR AFRICA. TILL 2025

1 TERAWATT (TW) = 1 trillion watts

ENERGY opens the DOORS to:

In

ADVANTAGES.

PUBLIC. SOCIAL.

Internet world-wide communication
Information.

Schools. Educational Programs.



Open perspectives in life.

Knowledge. Experience.

Healthcare.

Food.



Cloths. Wellbeing.
Training.

QUALIFICATION.

Higher education.

JOBS.



Programmes

Africa – key facts ALGERIA Capacity



SONELGAZ

- **Locomotive du développement du secteur de l'électricité et du gaz,**
- **organisée en filiales recouvrant l'ensemble des activités liées à l'électrification:**
 - ✓ **Engineering, production, contrôle qualité, distribution, transport, opérateur système ,**
 - ✓ **Un important savoir faire, capitalisé à travers l'électrification de 2 500 000 KM2, avec un taux de près de 100%,**
 - ✓ **Fourniture assurée, en majorité, par la production nationale (câbles, transformateurs, postes, accessoires, supports,,,) à travers**
 - ✓ **Tissu industriel de plus de 260 grandes usines,**
 - ✓ **Et près de 1000 entreprises de réalisations,**



Africa – key facts ALGERIA Capacity



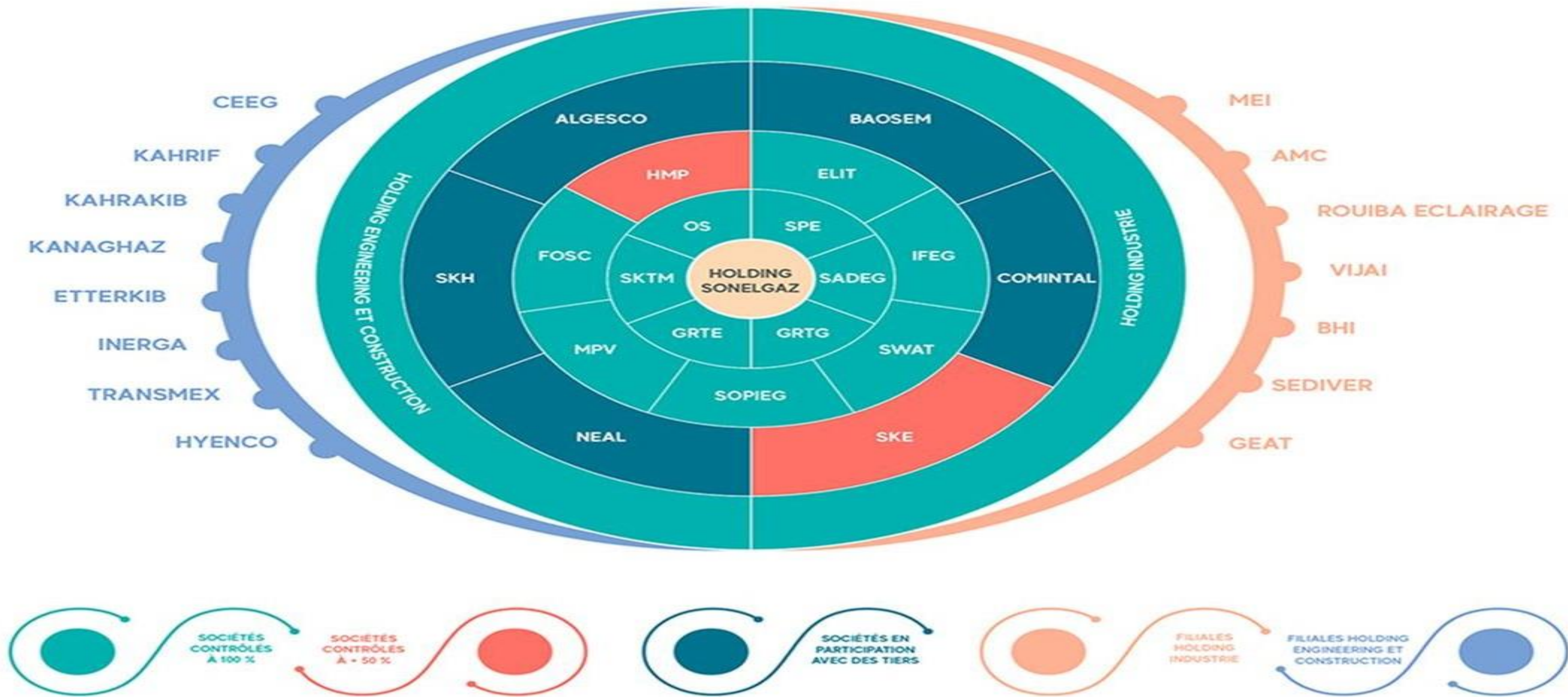
SONELGAZ:

- **Effectifs :** **91 951 travailleurs**
- **Capacité installée:** **22 979 MW**
- **Production d'Electricité:** **73 838 GWh**
- **Puissance Maximale appelée :** **14 714 MW**
- **Longueur réseau de transport électrique:** **31 164 km**
- **Longueur réseau de distribution électrique:** **357 185 km**
- **Longueur réseau de transport Gaz:** **22 623 km**
- **Longueur réseau de distribution Gaz:** **126 952 km**
- **Nombre de clients Electricité :** **10 494 465**
- **Nombre de clients Gaz:** **6 450 538**
- **Renouvelable installé:** **350 MW**



Africa – key facts ALGERIA Capacity

SCHÉMA ORGANISATIONNEL
DU GROUPE SONELGAZ



Africa – key facts ALGERIA Capacity



Le plan de développement 2018-2028 se présente comme suit :

- **Production de l'électricité : Capacité additionnelle 2018-2028:** **18 749 MW**
- **Transport de l'électricité: Longueur additionnelle 2018-2028:** **29 682 km**
- **Transport du gaz: Longueur additionnelle 2018-2028:** **9 000 km**
- **Distribution de l'électricité et du gaz: Développement prévue, sur la période 2018-2028:**
 - réseau d'électricité de **106 563 km** de lignes,
 - **51 694** postes,
 - **1 365 034** branchements,
 - réseau gaz de **54 509 km**,
 - **2 322 184** branchements gaz,
- **Renouvelables: 5 600 MWc à l'horizon 2028**





شکرا کم