

100 000  
rods



# FOREWORD

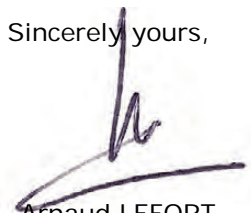
In July 2013, the 100,000<sup>th</sup> Prevectron® Early Streamer Emission lightning protection rod has been manufactured.

Celebrating this new milestone, the “100,000 rods” book pays tribute to those who have trusted the company INDELEC and its revolutionary Early Streamer Emission lightning rod and made this extraordinary journey a reality. It highlights some Prevectron® references, illustrating the impressive variety of sites, structures and locations on five continents protected by INDELEC lightning air terminals.

Thanks to continuous research in laboratories as well as real lightning conditions, the world best-selling ESE lightning rod is constantly developed and improved. Simultaneously, INDELEC keeps expanding its network of exclusive business partners, now representing the company and servicing its clients in more than 80 countries worldwide.

The amazing feat of the Prevectron® is therefore far from over. Wherever you travel, you will definitely be able to spot the characteristic shape of the Prevectron® on new iconic buildings and sites in the near future.

Sincerely yours,

A handwritten signature in dark ink, appearing to read 'Arnaud LEFORT', with a stylized flourish at the end.

Arnaud LEFORT  
President  
INDELEC SA

For nearly 60 years, INDELEC Group has been growing while focusing on its core business: Lightning Protection.

The company has always maintained a full control on its lightning protection equipment, from the manufacturing process up to the installation on site.

INDELEC ESE air terminals are solely manufactured in France. The production, while following extremely demanding quality process and controls, has been constantly improved and reaches now the highest level of technology in this industry.

Besides, INDELEC proposes to its customers a complete range of services associated to its products, in accordance with the French and international standards and regulations.

Our specialized consultants are designing tailored-made lightning protection systems in accordance with the latest standard and regulations versions: application of the "Rolling Sphere Theory" to a structure, Early Streamer Emission lightning protection air terminals or meshed cage protection areas, surge protection devices specifications...

INDELEC proposes to the end users in France a complete offer which includes state-of-the-art installation of external or internal lightning protection systems. Highly-skilled technicians are trained and qualified to work in various environment including nuclear or chemical risks....

Lightning Protection Systems maintenance is required since a number of components may lose their effectiveness over time due to corrosion, mechanical impacts, and repetitive lightning exposure. INDELEC subsidiary BCM is specialized in the maintenance of LPS installations in France.



## EXPERIENCE

With nearly 100,000 lightning rods installed worldwide, INDELEC has gathered an impressive experience of design and installation of safe, reliable and cost effective lightning protection solutions. This unique data record is also providing the R&D department with thousands of data from actual installations, subjected to natural lightning discharges.

In addition, the company has been conducting tests in various High Voltage laboratories in Europe, Asia or America, either for research and development purposes of standard compliance certification. Still, these tests cannot be representative of the real lightning phenomenon and assess the reliability and life time of an air terminal.

INDELEC has therefore innovated also in terms of lightning rods testing, being the sole manufacturer to regularly conduct test campaigns in real lightning conditions. This has been made possible thanks to the research of the French Atomic Energy Commission (CEA) on lightning triggering using dedicated rockets: these "Lightning Rocket System" LRS allow the research team to trigger a natural lightning discharge from the clouds under thunderstorm conditions.

Conducted successively in USA, France and Brazil, these campaigns were completed by another natural lightning site on the North West coast of Japan, providing extremely rare data and pictures to INDELEC R&D engineers.





# VISION AND VALUES

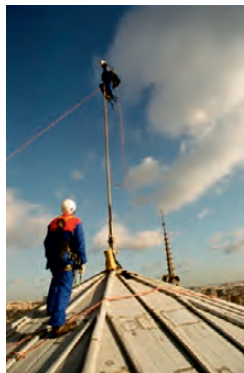
## Our vision

We are living in an increasingly booming and fast changing world where safety and sustainability are key issues. Still, lightning remains a unexpected and extremely harmful threat for persons, buildings and equipment.

INDELEC vision is to offer the highest quality of engineering to deliver the safest and most cost effective solutions to manage the lightning risk. Uncompromised quality, massive R&D investments, staff excellence and lightning-business focus are our main assets to “master” lightning.

## Our values

- Uncompromised quality
  - Engineering excellence
  - Integrity and transparency
  - Safety-minded



## SOCIAL RESPONSIBILITIES



For more than 35 years, INDELEC has been cooperating with business partners in a large number of countries, including developing countries facing huge challenges fighting against poverty, illiteracy and poor healthcare systems.

INDELEC intends also to become a responsible and influential social contributor and registered a new association "Fair Planet by Indelec" in 2007 with the following objective: funding projects aimed at expanding access to education, health and food in developing countries.

Funds are raised from INDELEC sales: each client is paying a "Fair Planet contribution" of 1€ per unit and INDELEC is adding 1 € e.g. 2 € collected for each lightning rod unit. Fair Planet Board selects amongst social projects proposed by our local partners or other associations and allocates the funds to the selected ones.

In 2008, Fair Planet financed the construction of a greenhouse, the drilling of wells and a pump water for the Horticultural center of the Association for Disabled People in Bangalore, India providing them a job and resources.

In 2009, Fair Planet decided to finance a French-based association Elevages sans Frontières. It supports rural families in developing countries with micro credit schemes in Senegal.

Since 2010, Fair Planet is involved in Vietnam, supporting students by creating a "Fair Planet scholarship" as well as purchasing medical equipment for a neonatal intensive care for the newborns.

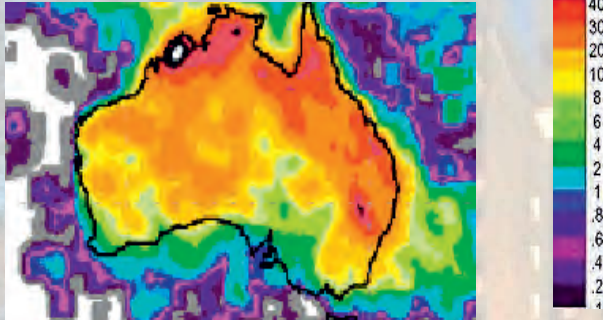
In 2013, Fair Planet has chosen to partner with a local NGO in Togo to build an orphanage.



# AUSTRALIA



**Average Lightning Flash density**



<b>Language</b>	English
<b>Capital</b>	CANBERRA
<b>Total area</b>	7,686,850 km <sup>2</sup>

## **Climate**

influenced by ocean currents,  
arid to semi arid (dry desert in the center)  
temperate in the south-east  
tropical in the north (rainforests, cyclones)

## **Natural resources**

copper, gold, diamonds, natural gas, coal, forests,  
agriculture.

<b>Population</b>	22,015,576
<b>Density</b>	2.79 (people per km <sup>2</sup> )
<b>Currency</b>	Australian Dollar (AUD)
<b>GDP</b>	US \$ 40,800 (per capita)
<b>Member of</b>	WTO, OECD, ASEAN, G20...

## **Export goods**

21th world exporter.

coal, iron-ore, gold, alumina, fuels, wheat, wool,  
machinery, transport equipment...





St Johns College  
Camperdown



Kenthurst Study Centre  
Kenthurst



Dubbo City Council  
Dubbo



Willoughby Council Works  
Depot - Willoughby



Art Gallery  
Windsor



Hawkesbury City Council  
Windsor



Burbank Cooperate Center  
Baulkham Hills



Hilton Hotel  
Sydney



Hunter Water  
Newcastle



John Hunter Hospital  
Newcastle



Versatile Lexington  
Baulkham Hills

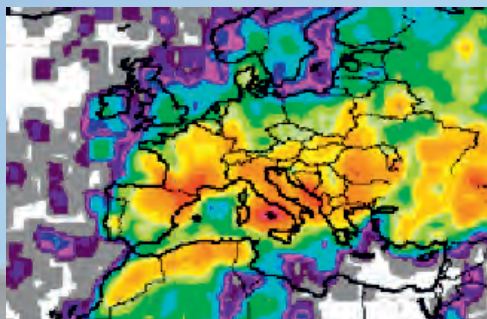


Kirra Surf Apartments  
Gold Coast

# BELGIUM



## Average Lightning Flash density



**Languages** Dutch, French and German

**Capital** BRUSSELS

**Total area** 30,528 km<sup>2</sup>

### Climate

temperate from the coastal regions inland to Brussels, more continental in the Ardennes: cold winters, warm summers

### Natural resources

construction materials, silica sand, carbonates

**Population** 10,438,453

**Density** 341.9 (people per km<sup>2</sup>)

**Currency** Euro (EUR)

**GDP** US \$ 37.200 (per capita)

**Member of** EU, WTO, NATO, OECD, ...

### Export goods

15th world exporter.

finished diamonds, chemicals, machinery, metal products, foodstuff.





DANONE factory  
Rotselaar



Steel factory  
Charleroi



Fortified castle  
Bouillon



Saint-Rémy Church  
Warnant



Saint-Remacle Church  
Schaltin



Gabriel Technologies factory  
Ghlin Baudour



Retirement home  
Braine le Château



Fire station  
Neufchâteau



Building centrage  
Bruxelles



Apartment  
Wavre



Luxembourg University  
Limpertsberg

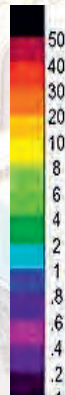
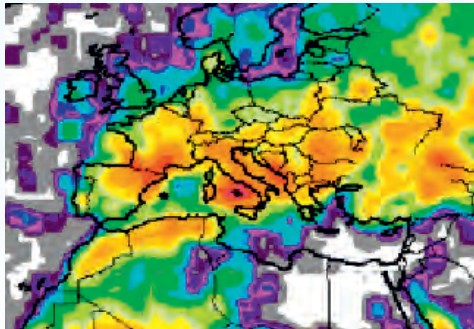


Church  
Anseremme

# BULGARIA



## Average lightning flash density



**Language** Bulgarian

**Capital** Sofia

**Total area** 110,911 km<sup>2</sup>

**Climate**  
temperate continental, mild summers, cold and snowy winters

**Natural resources**  
copper, bauxite, lead, zinc, coal, tobacco, livestock

**Population** 7,037,935

**Density** 63.4 (people per km<sup>2</sup>)

**Currency** Lev (BGN)

**GDP** US \$ 13,700 (per capita)

**Member of** EU, WTO, NATO...

**Export goods**  
69th world exporter.  
chemicals, iron and steel, cigarettes, wines and spirits, fruits, meat, vegetables

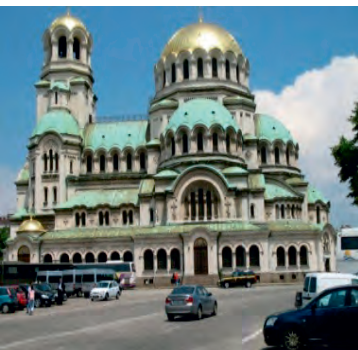




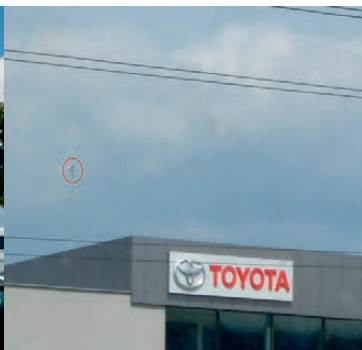
SET JSC  
Ruse



HILTON Hotel  
Sofia



Alexander Nevski Cathedral  
Sofia



Toyota Store  
Ruse



Cow farm "Montbelliarde"  
Vseslets



AVKO JSC office building  
Ruse



Mega Mall  
Ruse



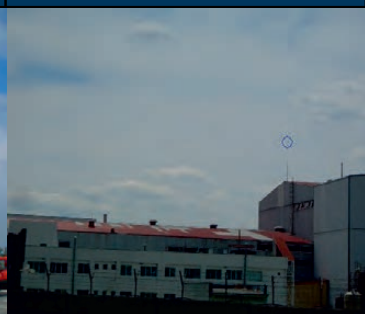
Chemical plant "Septona"  
Ruse



Clothing factory "Messalina"  
Ruse



"Europe" Gas Station  
Ruse



Maize processing plant  
Razgrad

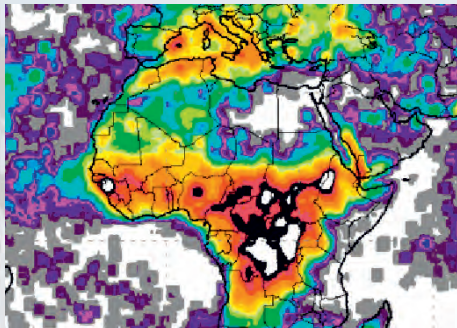


Ruse Mall  
Ruse

# CAMEROON



## Average lightning flash density



**Languages** French, English

**Capital** Yaounde

**Total area:** 475,442 km<sup>2</sup>

### Climate

Northern plains, semiarid and hot in the Sahel region (7 month dry season)

Southern tropical forest: warm (4 month dry season)

coastal tropical forest: warm and humid

### Natural resources:

oil, timber, cobalt, nickel, natural gas, coffee, pineapples, cotton...

**Population** 20,129,878

**Density** 42.3 (people per km<sup>2</sup>)

**Currency** CFA Franc (XAF)

**GDP** US \$ 2,300 (per capita)

**Member of** CEMAC, WTO, Commonwealth ...

### Export goods

112th world exporter.

aluminium, petroleum products, crude oil, cocoa beans, coffee, cotton...





National Assembly  
Yaounde



Prime Ministry  
Yaounde



Hilton Hotel  
Yaounde



Bank of Central African  
States (BEAC)  
Douala



Bank of Central African  
States (BEAC)  
Yaounde



Presidential Palace  
Yaounde



National Fund of Social  
Insurance (CNPS)  
Yaounde



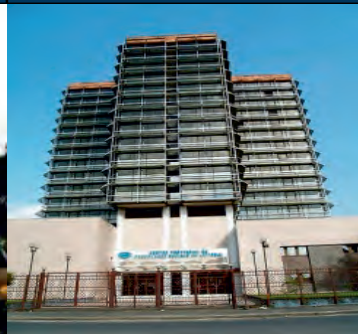
Mont-Fébé Hotel  
Yaounde



Supreme Court  
Yaounde



Posts and  
Telecommunications  
Ministry - Yaounde



National Fund of Social  
Insurance (CNPS)  
Douala



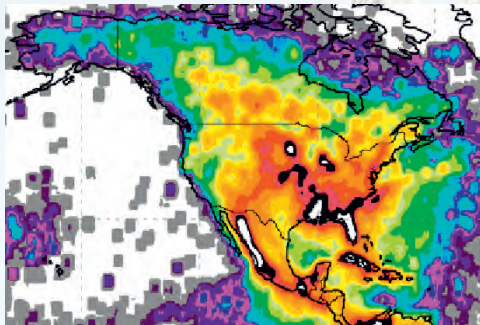
Ministry of Finance  
Yaounde



# CANADA



Average lightning flash density



**Languages** English, French

**Capital** OTTAWA

**Total area** 9,984,670 km<sup>2</sup>

## Climate

sub arctic and arctic in the north  
temperate in the south

## Natural resources:

copper, gold, diamonds, petroleum, natural gas,  
hydropower, forest products, fish...

**Population** 34,300,083

**Density** 5.7 (people per km<sup>2</sup>)

**Currency** Canadian Dollar (CAD)

**GDP** US \$ 41,100 (per capita)

**Member of** WTO, NATO, NAFTA, G20...

## Export goods

11th world exporter.

automotive products, chemicals, aircrafts,  
petroleum products, aluminium...



Saint-Bernard Church  
Quebec



St Basile de Portneuf  
Church - Quebec



L'islet Sur Mer church  
Quebec



St-Henri Church  
Quebec



Charlevoix Church  
Quebec



St Basile Church  
Toronto



Notre Dame des Des Neiges  
Quebec



Chalmers Wesley Church  
Quebec



Trois-Pistoles Church  
Quebec



St Augustin-de Desmaures  
Church - Quebec



Sœurs de la Visitation  
Convent - Ottawa



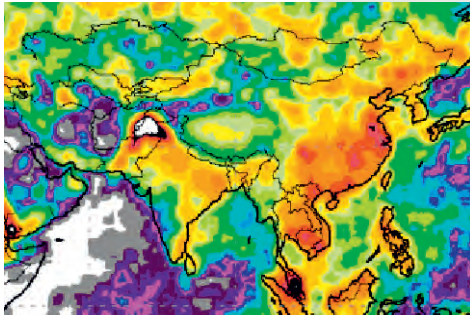
Honfleur Church  
Quebec



# CHINA



## Average lightning flash density



**Language** Chinese

**Capital** Beijing

**Total area** 9,596,560 km<sup>2</sup>

## Climate

dominated by dry seasons and wet monsoons, north is a cold temperate zone, south is tropical. rainy season from June to October.

## Natural resources

coal, iron ore, petroleum, natural gas, mercury, manganese, aluminium, uranium, potential for hydropower.

**Population** 1,343,239,923

**Density** 139.9 (people per km<sup>2</sup>)

**Currency** Yuan (CNY)

**GDP** US \$ 8,500 (per capita)

**Member of** WTO, ASEAN, APEC, G20 ...

## Export goods

1st world exporter

mainly footwear, toys, furniture, manufactured products.



Songjiang industrial zone  
Satellite ground receiver  
station



Residential Building  
Shanghai



Mingtian Building  
Shanghai



Lianhua Hill Park  
Shenzhen



Radio Transmission Tower -  
Shanghai



Oriental Television Building  
Shanghai



Office Building  
Shanghai



Ganghui Plaza  
Shanghai



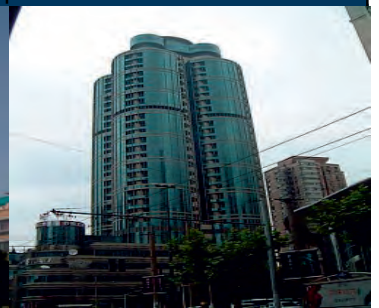
Gymnasium  
Shanghai



Wistaria Hotel  
Shanghai



Office Building  
Shanghai



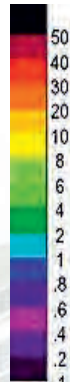
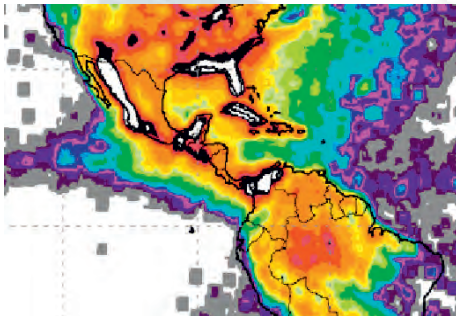
Zhihui Plaza  
Shanghai



# COLOMBIA



Average lightning flash density



**Language** Spanish

**Capital** Bogotá

**Total area** 1,138,910 km<sup>2</sup>

## Climate

diversity of climates in Colombia characterized by a tropical rainforest climate, wetlands, savannas, desert and alpine climate.

## Natural resources

rich in minerals and natural resources as emeralds, gold, platinum, oil, coal natural gas, iron ore, hydropower

**Population** 45,239,079

**Density** 39.7 (people per km<sup>2</sup>)

**Currency** Colombian Peso (COP)

**GDP** US \$ 10,400 (per capita)

**Member of** WTO, UNASUR...

## Export goods

58th world exporter.

petroleum products, nickel, copper paper products, natural gas, green coffee...





Western University  
Cali



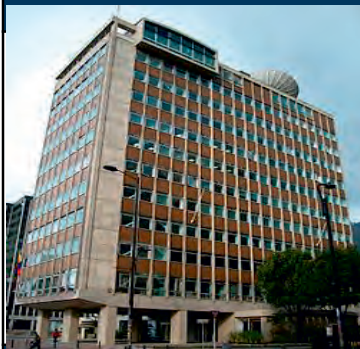
National University  
Colombia



Administrative Building  
Cali



Stadium  
Cali



Ecopetrol building  
Bogotá



Building Torres Del Rio  
Medellín



Octavio Building  
Cali



Previsora Insurance  
Bogotá



Republic Bank  
Cali



Santa Clara Hotel  
Cartagena



Santa Teresa Hotel  
Cartagena

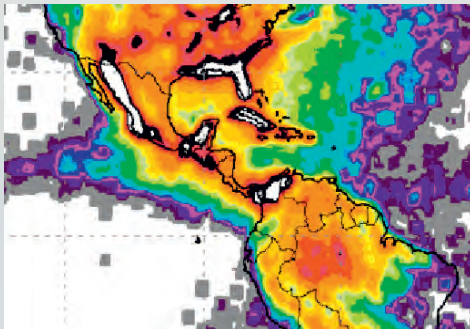


Electric power company  
Bogotá

# COSTA RICA



## Average lightning flash density



**Language** Spanish

**Capital** San José

**Total area** 51,100 km<sup>2</sup>

### Climate

humid tropical zone of the Atlantic  
two seasons in Costa Rica : dry and wet

### Natural resources

hydroelectricity, oil, cotton, coffee, sugar

**Population** 4,636,348

**Density** 90.7 (people per km<sup>2</sup>)

**Currency** Costa Rican Colon (CRC)

**GDP** US \$ 12,100 (per capita)

**Member of** WTO, OAS, SICA ...

### Export goods

89th world exporter.

2nd largest exporter of palm hearts and first exporter of pineapples.

the main Latin American exporter of ornamental plants, foliage and plants to European Union.





Basilica  
Cartago



Blue Valley high school  
San José



East Shopping mall  
San José



Apart Hotel Villa of Rio  
San José



Costa Rica Bank  
San José



Lafise Bank  
San José



Credomatic Bank  
San José



The Fiesta Resort  
Puntarenas



Melia Conchal Hotel  
Guanacaste



Cabo Velas Hotel  
Guanacaste



Calderon Guardia Hospital  
San José

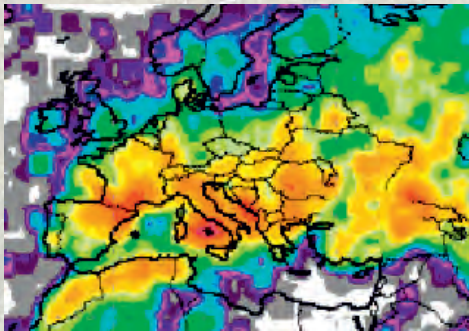


Confort Parrot Hotel  
Guanacaste

# CYPRUS



Average lightning flash density



**Languages** Greek ,Turkish, English

**Capital** Nicosia

**Total area** 9,250 km<sup>2</sup>

## Climate

temperate, Mediterranean  
summers are hot and dry, winters are cool.  
Nicosia is a city that is knowing hot temperatures.

## Natural resources

copper, gypsum, timber, salt, marble...

**Population** 1,138,071

**Density** 123.0 (people per km<sup>2</sup>)

**Currency** Euro (EUR)

**GDP** US \$ 29,100 (per capita)

**Member of** EU, WTO ...

## Export goods

125th world exporter.

clothing, potatoes, cigarettes, cement,  
electronics, vehicles, pharmaceutical  
products, fuels, agricultural products...





Kykkos Monastery  
Troodos



Bank of Cyprus  
Nicosia



New general hospital  
Nicosia



New international airport  
Larnaca



Imperial Hotel  
Paphos



The Annabelle Hotel  
Paphos



Almyra Hotel  
Paphos



Pioneer Hotel  
Paphos



Mercedes Benz showroom  
Nicosia



City Plaza shopping center  
Nicosia



Football stadium  
Nicosia



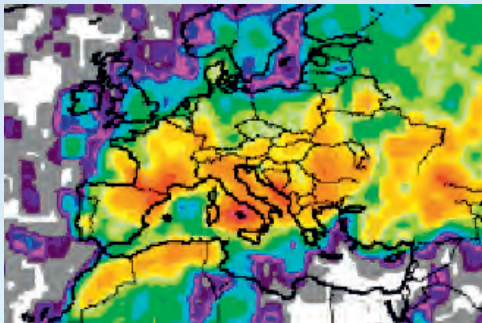
Capital shopping center  
Nicosia



# CZECH REPUBLIC



Average lightning flash density



**Language** Czech

**Capital** Praha

**Total area** 78,866 km<sup>2</sup>

**Climate**  
continental, temperate climate.

**Natural resources**

coal, soft coal, kaolin, clay, graphite, timber.

**Population** 10,177,300

**Density** 129.0 (people per km<sup>2</sup>)

**Currency** Czech Corunna (CZK)

**GDP** US \$ 27,400 (per capita)

**Member of** EU, WTO, NATO, OECD ...

**Export goods**

31nd exporter in the world.

mainly manufactured goods, chemicals and Machinery , cars and transport equipment.



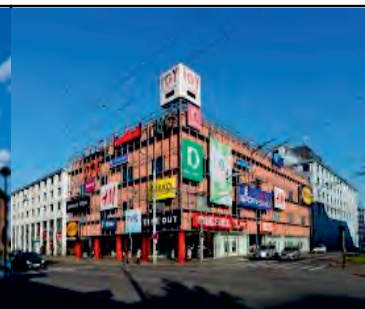
Baumax  
Pardubice



Prosek Hotel  
Praha



Esprit Hotel  
Litomysl



Shopping center  
Ceske Budejovice



Cepkov mall  
Praha



OBI Company  
Ceske Budejovice



Interbanka  
Praha



Czech Sportelna bank  
Bilina



Residence tower  
Praha



Esprit Hotel  
Praha



Schneider Electric  
Ceske Budejovice



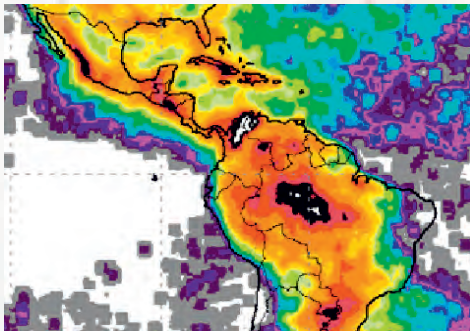
Kaufland Company  
Zlin



# ECUADOR



## Average lightning flash density



**Language** Spanish

**Capital** Quito

**Total area** 283 560 km<sup>2</sup>

### Climate

tropical climate

there are two main seasons, wet /dry.

### Natural resources

petroleum, minerals, fish, timber, hydropower.

**Population** 15,223,680

**Density** 53.7 (people per km<sup>2</sup>)

**Currency** US Dollar (USD)

**GDP** US \$ 8,600 (per capita)

**Member of** WTO, CELAC, UNASUR...

### Export goods

70th world exporter.

mainly oil and agricultural products (bananas, flowers, shrimps).





Bell South offices  
Quito



Carlton Hotel  
Quito



Tanques Petroleon  
Ecuador



Gamavision Television  
Quito



Velero bridge  
Quito



Commercial building  
Quito



Pronaca industrial firm  
Quito



Marriott Hotel  
Quito



Central Bank  
Quito



Ecuatronic towers  
nationwide



Chemical plant  
Quito

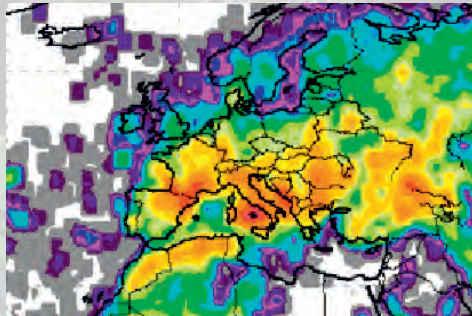


TV Telesystems  
Guayaquil

# FRANCE



Average lightning flash density



**Language** French

**Capital** Paris

**Total area** 547,030 km<sup>2</sup>

## Climate

4 climatic zones: Western seaboard is humid with cool summers; semi continental zone in the East (cold winter and hot summer); intermediate zone around Paris and the Central region and a Mediterranean zone with mild winters and quite hot summers in the South of France.

## Natural resources

coal, iron ore, bauxite, uranium, antimony, arsenic, potash, fluorite, gypsum, timber, fish.

**Population** 65,800,000

**Density** 120.2 (people per km<sup>2</sup>)

**Currency** Euro ( EUR)

**GDP** US \$ 35,600 (per capita)

**Member of** UE, WTO, OECD, G8 ...

## Export goods

5th exporter in the world.

Food and Beverages, (wine, champagne, cheese, meat, milk etc...), aircrafts, industrial equipments, medical products, luxury goods.





Notre Dame de Paris  
Paris



TOTAL Refinery  
Feyzin



National Assembly  
Paris



The Madeleine Church  
Paris



The Imperial Palace  
Annecy



Unesco Headquarters  
Paris



The European Parliament  
Strasbourg



Banque de France  
Paris



Chambord Castle  
Loire Valley



Versailles Castle  
Versailles



Charles-de-Gaulle Airport  
Paris

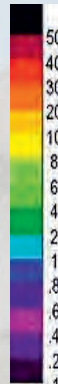
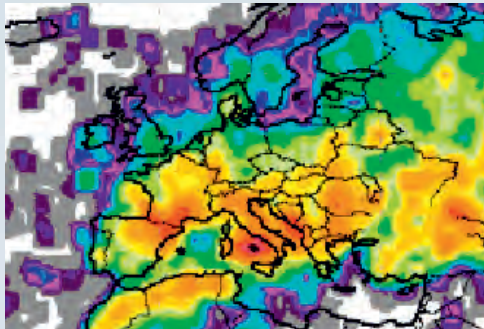


EDF power plant and  
substation

# G R E E C E



Average lightning flash density



**Language** Greek

**Capital** Athens

**Total area** 131,940 km<sup>2</sup>

## Climate

Mediterranean with hot and dry summers, cold and wet winters with snow.

## Natural resources

lignite, petroleum, iron ore, bauxite, lead, zinc, nickel, marble, hydroelectric potential.

**Population** 10,767,827

**Density** 81.6 (people per km<sup>2</sup>)

**Currency** Euro ( EUR)

**GDP** US \$ 26,600 (per capita)

**Member of** EU, NATO, OECD...

## Export goods

67th world exporter.

mainly manufactured goods, food products, derivatives of hydrocarbons, cement, chemicals and pharmaceuticals.

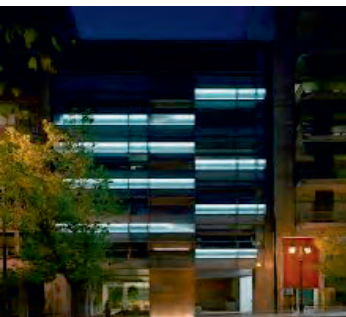




Acropolis  
Athens



Iniohos Hotel  
Delfi



Office building  
Athens



New commercial center  
Kifissia



Erechtheion Temple  
Athens



Marine Hotel Palace  
Rethymno



University  
Piraeus



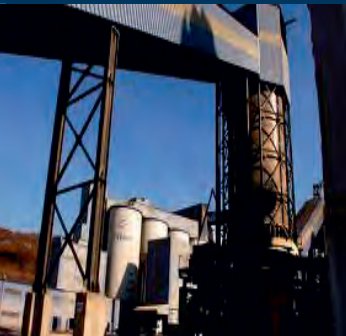
Church in Vrilissia Attikis  
Arahova



Depollution watering  
Larissa



Petrogaz SA industry  
Ymittos



Titan SA cement industry  
Athens

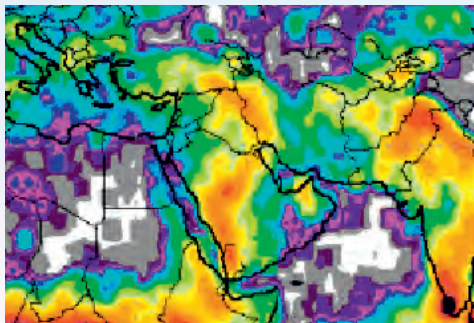


Kallidromo tunel  
Tithorea

# GULF COUNTRIES



## Average lightning flash density



## Gulf Countries

Saudi Arabia, Kuwait, Bahrain, United Arab Emirates, Oman, Qatar

**Language** Arabic, English

## Capital

Riyadh, Kuwait, Manama, Abu Dhabi, Muscat, Doha

**Total area** 2,674,646 km<sup>2</sup>

## Climate

Desert climate characterized by high temperatures during the day and low temperatures at night. Very low annual rainfall.

## Natural resources

the Gulf countries have more than half of reserves of crude oil in the world, natural gas.

**Population** 40,161,125

**Density** 139.9 (people per km<sup>2</sup>)

**Currency** Saudi Arabian Riyal (SAR)  
Kuwaiti Dinar (KWD)  
Bahraini Dinar (BHD)  
UAE Dirham (AED)  
Omani Riyal (OMR)

**Member of** WTO, Arabic league , OPEP...

## Export goods

export mainly oil & gas





Qatar National Cement



Platinum Tower  
Bahrain



Al Kharj WWT plant  
Saudi Arabia



Polypropylene Complex  
Jubail Saudi Arabia



EBC  
Manama - Bahrain



Telecom Towers  
Dubai



Community Center  
Doha - Qatar



Royal Meridien  
Bahrain



Emirates Aluminum  
Company – Abu Dhabi



Marvida tower  
Bahrain



Packaging Industry  
Kuwait

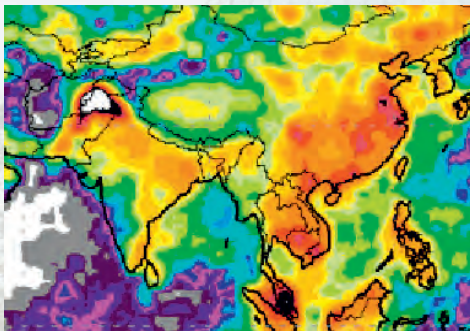


Jamjoom Mall  
Jeddah – Saudi Arabia

# HONG KONG



Average lightning flash density



**Language** Chinese, English

**Capital** Hong Kong

**Total area** 1,092 km<sup>2</sup>

## Climate

monsoon-influenced, humid subtropical  
cool and cloudy winter, summer are hot, humid  
and rainy (thunderstorms), autumn is sunny.

## Natural resources

metalliferous minerals, mining deepwater port

**Population** 7,153,519

**Density** 6,550.3(people per km<sup>2</sup>)

**Currency** Hong Kong Dollar (HKD)

**GDP** US \$ 49,800 (per capita)

**Member of** WTO, APEC ...

## Export goods

12th exporter in the world

Mainly textile products, manufactured goods,  
machinery and electronic components.





Nestle Factory



Matilda International  
Hospital



The Chinese University



Sewage Treatment Plant



Outdoor Sport Stadium



Sewage Treatment Plant



Sewage Treatment Plant



Sewage Treatment Plant



Residential Building



Admiralty Plaza



Hong Kong Art Centre

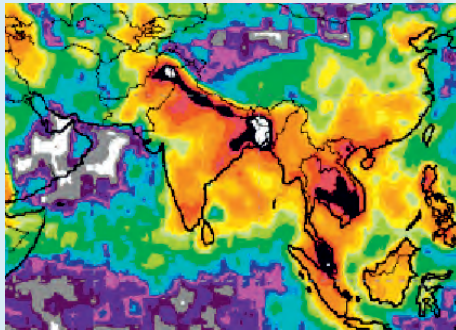


Lee Garden Hotel

# INDIA



## Average lightning flash density



**Language** Hindi, English

**Capital** New Delhi

**Total area** 3,287,590 km<sup>2</sup>

## Climate

hot tropical country except in the north, more continental, monsoon rains very heavy.  
Typhoon season from August to Nov. (high risk in the East cost)

## Natural resources

coal (fourth largest reserves in the world), iron ore, bauxite, titanium ore, chromites, natural gas, diamonds, petroleum, limestone.

**Population** 1,205,073,612

**Density** 366.5 (people per km<sup>2</sup>)

**Currency** Indian rupee (INR)

**GDP** US \$ 3,700 (per capita)

**Member of** G20, WTO, APEC, Commonwealth ...

## Export goods

20th world exporter.

petroleum products, precious stones, iron and steel, machinery, chemicals, vehicles, software...





Red Fort –  
New Delhi



AIIMS  
Bhubaneswar



IOCL  
New Delhi



Mylapore temple  
Chennai



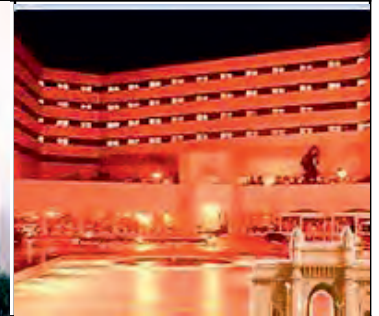
Raheja Solitaire  
Goregaon West



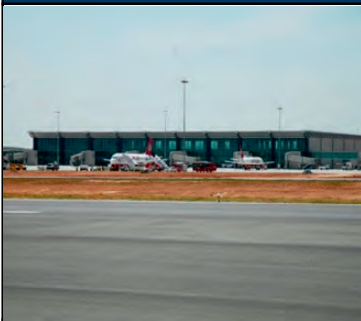
Infosys  
Bangalore



ICICI Bank BKC  
Mumbai



Sahara Centre  
Mumbai



International Airport  
Bangalore



Bhushan Power & Steel  
Orissa



Rajiv Gandhi International  
Airport - Hyderabad

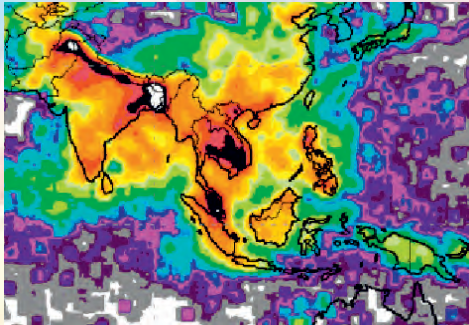


Saint Gobain  
Sriperumbudur TN

# INDONESIA



## Average lightning flash density



**Language** Bahasa Indonesia

**Capital** Jakarta

**Total area** 1,919,440 km<sup>2</sup>

### Climate

tropical climate with high humidity.

dry season (June to Sept.), rainy season (Dec. to March), typhoons during the tropical season (between Sept. and Dec.) causing rainstorms and heavy winds

### Natural resources

petroleum, tin, natural gas, nickel, timber, bauxite, copper, coal, gold, silver.

**Population** 248,216,193

**Density** 129.3 (people per km<sup>2</sup>)

**Currency** Indonesian rupiah (IDR)

**GDP** US \$ 4.700 (per capita)

**Member of** WTO, ASEAN, G20, APEC ...

### Export goods

29th exporter in the world.

oil and gas, electrical appliances, minerals, oil palm, paper and wood, manufacturing products.





Golf Driving Range  
Cibitung



Ibis Solo Hotel



Pertamina  
Kalimantan (Borneo)



PLN  
Sumatra / Java



Grand Indonesia  
Jakarta



Ciputra Mall & Hotel  
Jakarta



Lombok Airport  
Lombok



Golf Halim  
Jakarta



Mall of Indonesia  
Jakarta



The Haven Seminyak  
Bali



HM Sampoerna  
Karawang

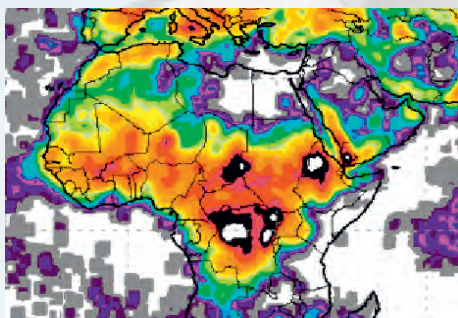


Sultan Hasanuddin Airport  
Makassar

# IVORY COAST



Average lightning flash density



**Language** French (official)

**Capital** Yamoussoukro

**Total area** 322,460 km<sup>2</sup>

## Climate

tropical along coast, semi arid in the north.  
three seasons - warm and dry, hot and dry, hot and wet.

## Natural resources

oil, natural gas, diamonds, iron ore, copper, gold, nickel, silica sand, clay, cocoa beans, coffee, palm oil, hydro- electricity.

**Population** 21,952,093

**Density** 68.1 (people per km<sup>2</sup>)

**Currency** West African CFA franc (XOF)

**GDP** US \$ 1,700 (per capita)

**Member of** WTO, ECOWAS ...

## Export goods

85th world exporter

1st cocoa world exporter

mainly tropical products from agriculture (coffee, cotton, oilseeds, fruit and Hevea), tobacco.





Caistab Building  
Abidjan



CHU of Cocody  
Abidjan



University  
Cocody



Embassy of France  
Abidjan



BCEAO  
Abidjan



Embassy of the United  
States- Abidjan



ASECNA  
Abidjan



African Development Bank  
Abidjan



Hôtel IBIS  
Abidjan



Worl Bank  
Abidjan



Treichville Hospital  
Abidjan

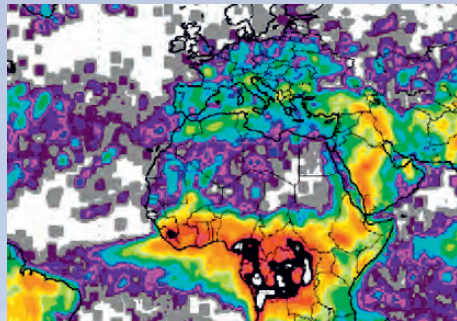


Autonomous Port  
Abidjan

# JORDAN



## Average lightning flash density



**Language** Arabic (official), English

**Capital** Amman

**Total area** 92,300 km<sup>2</sup>

### Climate

hot, dry climate characterized by long, hot dry summers and short, cool winters.

influenced between the subtropical aridity of the Arabian desert areas and the subtropical humidity of the Eastern Mediterranean areas.

wind can cause sandstorms (Shirocco).

### Natural resources

phosphates, potash, shale oil.

**Population** 6,508,587

**Density** 70.5 (people per km<sup>2</sup>)

**Currency** Jordanian Dinar (JOD)

**GDP** US \$ 6,000 (per capita)

**Member of** WTO, Arab League...

### Export goods

98th world exporter.

clothing, potash fertilizers, phosphates, vegetables and pharmaceuticals,





Istishari Hospital  
Amman



Faraj Building  
Amman



Parliament Building  
Amman



Applied University  
Al Balqa



Le Vendome Hotel  
Amman



Al Baraka Mall  
Amman



Airport  
Aqaba



Arab Bank Headquarters  
Amman



King Hussein Cancer  
Centre –Amman



King Hussein Convention  
Centre –Dead Sea



Royal Village  
Outskirts of Amman

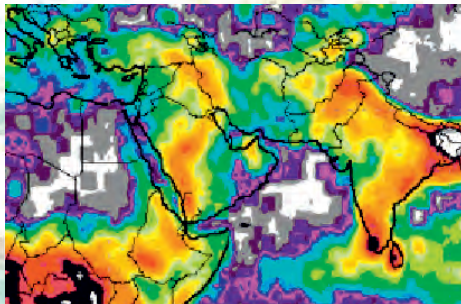


Jordan University of Science  
and Technology - Irbid

# LEBANON



Average lightning flash density



**Language** Arabic (official), French, English

**Capital** Beirut

**Total area** 10,400 km<sup>2</sup>

## Climate

Mediterranean climate with dry summer and cool, rainy winters.

## Natural resources

limestone, iron ore, salt, oil.

**Population** 4,140,289

**Density** 398.1 (people per km<sup>2</sup>)

**Currency** Lebanese pound (LBP)

**GDP** US \$ 15,700 (per capita)

**Member of** Arab League ...

## Export goods

104th world exporter.

jewellery, pharmaceuticals, textiles, tobacco, electrical and electronic equipment, iron, steel, sulfur and machinery.

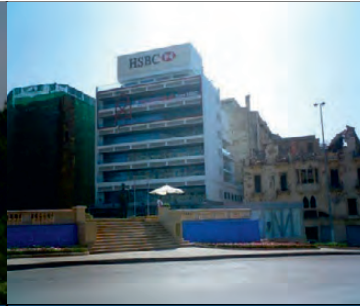




Residential building  
Beirut



Rahma Medical center -  
Tripoli



HSBC Bank  
Beirut



Our Lady of Lebanon  
Harissa



Al-Salam Hospital  
Kobayat



Shell gas stations  
Nationwide



Volkswagen showroom  
Beirut



Aluxal aluminum factory  
Beirut



Composting plant Sukomi  
Beirut



Citadel  
Jbeil



Caves  
Jeitta

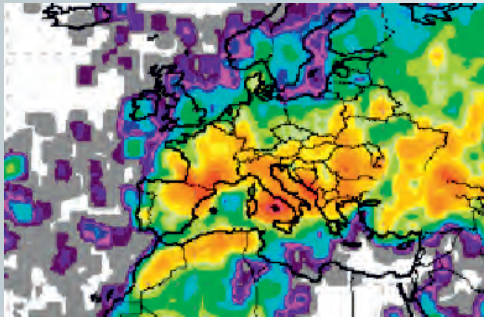


PT Stations  
Nationwide

# MACEDONIA



Average lightning flash density



**Language** Macedonian

**Capital** Skopje

**Total area** 25,713 km<sup>2</sup>

## Climate

Mediterranean, continental or mountain  
summers and autumns warm and dry  
winters cold with heavy snowfall

## Natural resources

ore-grade iron, copper, lead, zinc, chromate,  
nickel, gold, silver, gypsum, timber.

**Population** 2,082,370

**Density** 81.0 (people per km<sup>2</sup>)

**Currency** Macedonian Denar (MKD)

**GDP** US \$ 10,500 (per capita)

**Member of** IMF, OSCE...

## Export goods

118th world exporter.

mainly textiles, chemicals, iron, steel,  
cement, electricity, food and pharmaceutical  
products.





Church Complex  
Sveti Spas



Kalishta Monastery  
Struga



Aleksandar Palas Hotel  
Skopje



Macedonian National Theatre  
Skopje



Metropol Hotel  
Ohrid



Biser Hotel  
Struga



FON University  
Skopje



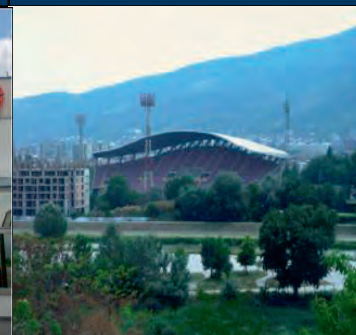
Stone Bridge building  
Skopje



Prilep Brewery  
Prilep



Airport  
Skopje



City stadium  
Skopje

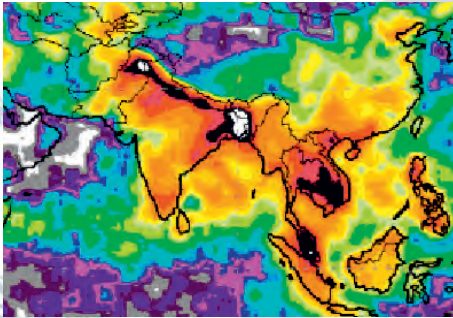


Vitaminka  
Prilep

# MALDIVES



Average lightning flash density



**Language** Maldivian, English

**Capital** Male

**Total area** 300 km<sup>2</sup>

## Climate

tropical humid with monsoon.  
summer windy and rainy.  
dry period extends over the January to April.

## Natural resources

fish, coconut.

**Population** 394,451

**Density** 1314.8 (people per km<sup>2</sup>)

**Currency** Rufiyaa (MVR)

**GDP** US \$ 8,800 (per capita)

**Member of** WTO, The Commonwealth ...

## Export goods

182th world exporter.

mainly fisheries products (fish fillets, fish consumption, dried, salted, canned).





H. Dh. Atoll School  
Vaikaradhoo Island



BHM Building  
Male



Paradise Island  
Resort



Bolifushi Island  
Resort



Faculty of Management &  
Computing - Male



Head Quarters Sh.  
Funadhoo Island



Student Hotel  
Male



Majeedhiyya School  
Male



Building  
Hulhumale



Housing Development  
Hulhumale



International Airport  
Male

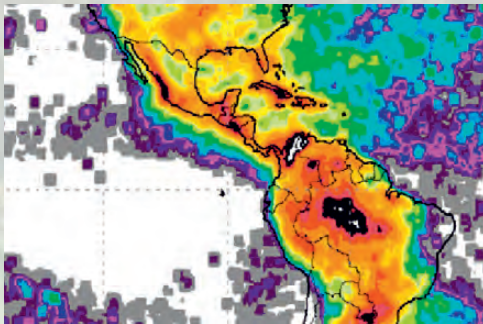


MACL Headquarters  
Male

# MEXICO



## Average lightning flash density



**Language** Spanish

**Capital** Mexico City

**Total area** 1,972,550 km<sup>2</sup>

## Climate

temperate and tropical zones

North: dry climate with sporadic rainfall

Mexican coasts are vulnerable to hurricanes during the summer and fall.

## Natural resources

petroleum, silver, copper, gold, lead, zinc, natural gas, timber.

**Population** 114,975,406

**Density** 58.3 (people per km<sup>2</sup>)

**Currency** Mexican Peso (MXN)

**GDP** US \$ 15,100 (per capita)

**Member of** WTO, OECD, APEC, ALENA, NAFTA, G20...

## Export goods

14th exporter in the world.

automobile, electronics, television, computers, electricity, natural gas, oil products, silver, fruits, vegetables, coffee, cotton...





Interlomas Shopping Mall  
Mexico City



Banamex Financial Center  
Cancún



BBVA Bancomer  
Mexico City



Bodega Aurrera  
Mexico City



International Airport  
Toluca



Chrysler Plant  
Mexico City



Government Palace  
Mexico City



Golf Club Los Tabachines  
Cuernavaca



IBM  
Mexico City



National Institute of Nuclear  
Research– La Marquesa



KSB Foundation  
Queretaro

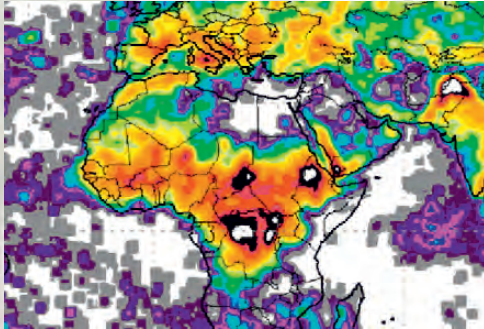


Cathedral of  
Mexico City

# MOROCCO



Average lightning flash density



**Language** Arabic, French

**Capital** Rabat

**Total area** 446,550 km<sup>2</sup>

## Climate

moderate and subtropical (breezes off the Mediterranean Sea and Atlantic Ocean), extreme temperatures in the interior, snow in the Atlas Mountains.

## Natural resources

phosphates, iron ore, manganese, lead, zinc, fish, salt.

**Population** 32,309,239

**Density** 72.3 (people per km<sup>2</sup>)

**Currency** Moroccan Dirham (MAD)

**GDP** US \$ 5,100 (per capita)

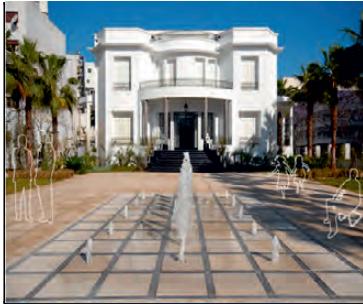
**Member of** Arab League, UMA, IMF ...

## Export goods

71th world exporter.

mainly phosphates and derivatives, textiles, electrical and electronic components.





British Council  
Casablanca



United Nations Clinic  
Rabat



University  
Ifrane



French Consulate  
Marrakech



Asment Factory  
Temara



Procter & Gamble  
Mohammedia



Total station  
Tanger



Radio transiter  
Marrakech



Total station  
Casablanca



SNRT antenna  
Nationwide



WWT Plant  
Benguerir

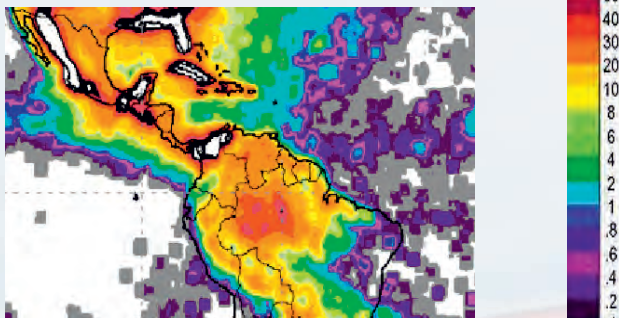


HOLCIM Quarry  
Benslimane

# NICARAGUA



## Average lightning flash density



**Language** Spanish

**Capital** Managua

**Total area** 129,494 km<sup>2</sup>

### Climate

tropical, hot and humid.

rainy season extends from May to October in the west up to January on the Caribbean coast, with occasional typhoons.

### Natural resources

gold, silver, copper, tungsten, lead, zinc, timber, fish.

**Population** 5,727,707

**Density** 44.2 (people per km<sup>2</sup>)

**Currency** Gold Cordoba (NIO)

**GDP** US \$ 3,200 (per capita)

**Member of** WTO, CELAC, SICA, IMF ...

### Export goods

119th world exporter.

mainly agricultural products, peanuts, shrimps, coffee and tobacco.





Xolotlán Shopping center  
Managua



Oscar S.A  
Managua



Children Hospital  
Managua



Central University Library  
Managua



Colonia supermarket  
Managua



Cervecera brewery  
Managua



Mill electric substation  
Ingenio Monterrosa



Industrial Building  
Managua



Telecommunication  
tower



Arnecom  
Leon



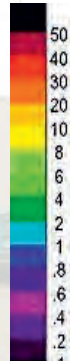
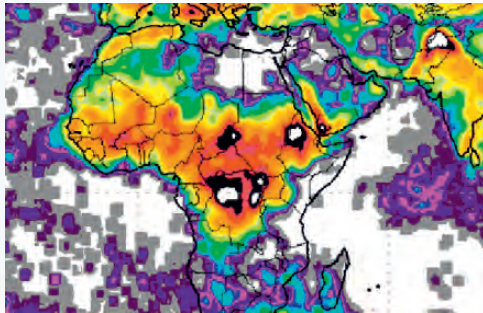
Power Plant  
South San Raphael



Shrimp Farm

# NIGERIA

Average lightning flash density



**Language** English (official)

**Capital** Abuja

**Total area** 923,768 km<sup>2</sup>

## Climate

four climates: tropical forest, tropical humid and dry, mountain climate

## Natural resources

natural gas, petroleum, tin, iron ore, coal, limestone, niobium, lead, zinc.

**Population** 170,123,740

**Density** 184.2 (people per km<sup>2</sup>)

**Currency** Naira (NGN)

**GDP** US \$ 2,600 (per capita)

**Member of** WTO, OPEC, OIC, Commonwealth...

## Export goods

38th world exporter.

main crude petroleum oils or minerals, light oils, natural gas, glazing, hides and skins.





National Assembly Complex  
Abuja



Diamond Bank Lagos HQ  
and nationwide branches



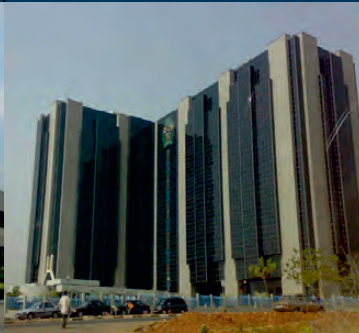
International Airport  
Abuja



National Communication  
Commission - Abuja



EKO Bank  
Lagos



Central Bank of Africa HQ  
Abuja



Zenith Bank Head offices  
and nationwide branches



NNPC Towers  
Abuja



Port Harcourt  
Airport



Defence Headquarters  
Abuja



National Hospital  
Abuja

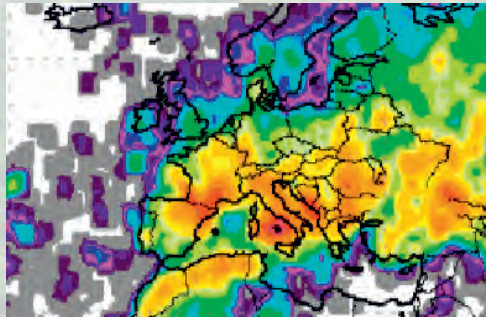


Unilever Nigeria PLC  
Lagos

# POLAND



Average lightning flash density



**Language** Polish

**Capital** Warsaw

**Total area** 312,685 Km<sup>2</sup>

## Climate

continental climate.

temperate climate with hot summers, frequent thundershowers, sunny autumns, cold winters and dry springs.

## Natural resources

coal, sulphur, copper, natural gas, silver, lead, salt, amber.

**Population** 38,415,284

**Density** 122.8 (people per km<sup>2</sup>)

**Currency** Zloty (PLN)

**GDP** US \$ 20,600 (per capita)

**Member of** EU, WTO, NATO, IMF...

## Export goods

27th world exporter.

Mainly cars, television equipment, crude petroleum oils and medicines.





Residential building Tyniec -  
Krakow



BITNER Company  
Trzyciąż



STALMECH Company  
Krakow



Street children's hospital  
Strzelecka - Krakow



EURO-Residential Building  
WIT



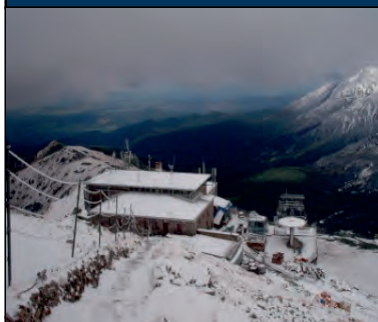
Will Batorska School  
Niepołomice



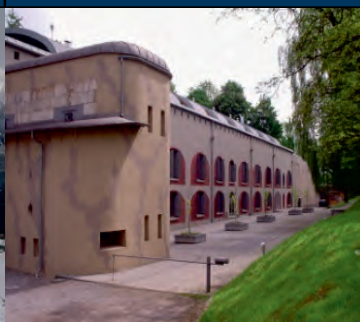
Residential Building  
Bikol



Podłęże School  
Niepołomice



Ski lift



Fort 47a. Węgrzce  
Krakow



Niepołomice School  
Krakow

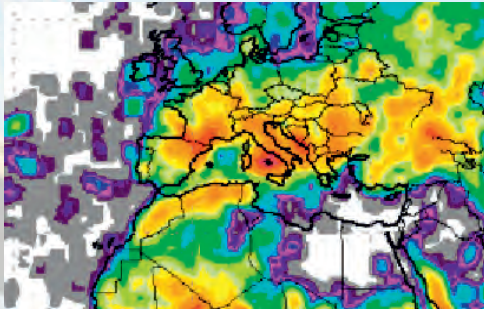


ProLogis 5000m2 logistic  
centre - Błonie k. Warszawy

# PORTUGAL



Average lightning flash density



**Language** Portuguese

**Capital** Lisbon

**Total area** 92,391 km<sup>2</sup>

**Climate**

warm temperate Mediterranean climate with wet season in winter.

**Natural resources**

rich in mineral resources: copper, gold iron ore, marble, uranium...abundant waterpower

**Population** 10,781,459

**Density** 116.7 (people per km<sup>2</sup>)

**Currency** Euro (EUR)

**GDP** US \$ 23,200 (per capita)

**Member of** EU, WTO, NATO, OSCE ...

**Export goods**

55th world exporter.

mainly machinery, vehicles, precision instruments, chemical activities, iron, steel, wood pulp and paper, agricultural products, leather and textiles.





Hawaii Hotel  
Leça do Balio



Cerebral Palsy Center  
Porto



Polytechnic Institute  
Bragança



Agricultural high school  
Castelo Branco



Polytechnic Institute  
Porta –Vila do Conde



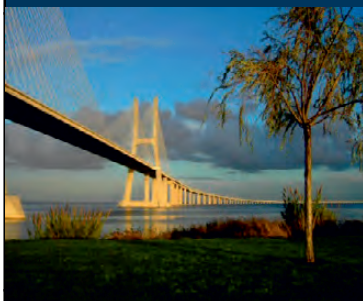
Casa-Lar Santa Isabel  
S. Pedro da Afurada



Professional school  
Braganca



Norte Shopping  
Porto



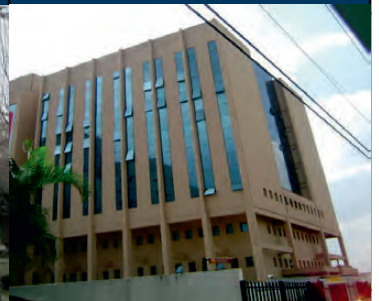
Vasco de Gama bridge  
Lisbon



Swimming pool  
Coimbra



Court  
Baiao

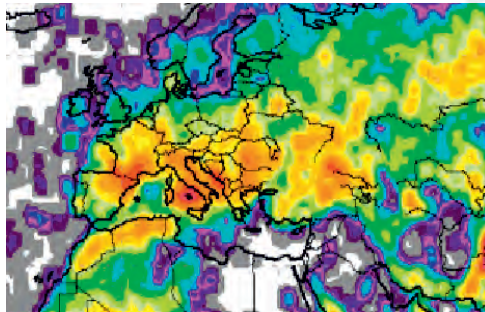


Hospital  
Resende

# ROMANIA



Average lightning flash density



**Language** Romanian

**Capital** Bucharest

**Total area** 237,500 km<sup>2</sup>

## **Climate**

temperate-continental climate with very distinct seasons: hot summers and long cold winters with abundant snowfalls.

## **Natural resources**

oil, timber, natural gas, coal, iron ore, salt, hydropower.

**Population** 21,848,504

**Density** 92.0 (people per km<sup>2</sup>)

**Currency** Leu (RON)

**GDP** US \$ 12,300 (per capita)

**Member of** EU, WTO, NATO, OSCE...

## **Export goods**

51 th world exporter.

mainly machinery and equipments, textiles, minerals and fuels, chemicals, textiles, wood, furniture, agricultural products.





Athenaeum  
Bucharest



Omu peak meteorological  
station (2505 m)



Nexans factory  
Arad



Continental Astoria Hotel  
Arad



Duke Hotel  
Bucharest



Mall  
Bucharest



National Theater  
Oradea



Interex  
Ploiesti



Arany Janos College  
Oradea



Continental Hotel  
Oradea



Carrefour Shopping Mall  
Bucharest

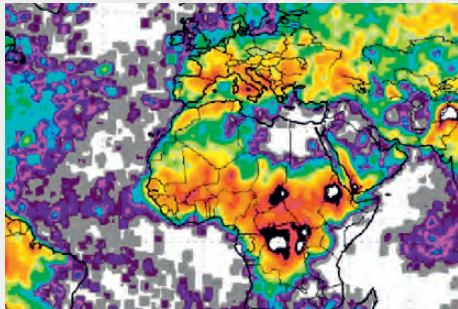


Ibis Hotel  
Bucharest

# SENEGAL



Average lightning flash density



**Language** French (official)

**Capital** Dakar

**Total area** 196,190 km<sup>2</sup>

## Climate

tropical, hot and humid.

located in the tropics, there are two seasons: dry and rainy season.

## Natural resources

mineral resources: phosphor, iron ore, unexploited deposits of gold, copper, titanium. fish, peanuts, millet, sorghum, manioc, rice, cotton...

**Population** 12,969,606

**Density** 66.1 (people per km<sup>2</sup>)

**Currency** CFA franc ( XOF)

**GDP** US \$ 1,920 (per capita)

**Member of** WTO, ECOWAS, Arab League...

## Export goods

132th world exporter.

mainly agricultural products: peanuts, cotton, sugarcane, rice, mining, petroleum products and manufacturing goods.





Presidential Palace  
Dakar



Refinery  
Mbao



Mosque  
Touba



National Assembly  
Dakar



Government Palace  
Dakar



Cheikh Anta Diop University  
Dakar



Church  
Kedougou



Autonomous Port  
Dakar



Grand-Yoff General Hospital  
Dakar



Prime Minister Office  
Dakar



Mosque  
Kolda

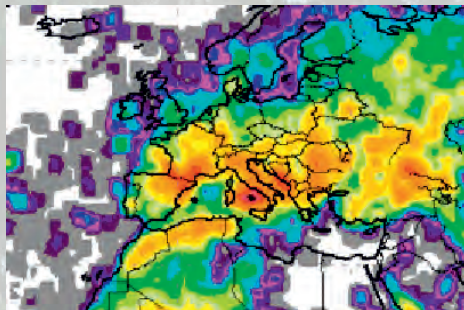


Senate  
Dakar

# SERBIA



## Average lightning flash density



**Language** Serbian

**Capital** Belgrade

**Total area** 77,484 km<sup>2</sup>

### Climate

continental in North (cold winters, hot, humid summers with precipitation).

Mediterranean continental climate (cold winters with snow, summers and autumns warm and dry).

### Natural resources

oil, gas, coal, iron ore, copper, lead, zinc, nickel, gold, silver, magnesium, pyrite, limestone, marble, salt.

**Population** 7,276,604

**Density** 93.9 (people per km<sup>2</sup>)

**Currency** Serbian Dinar (RSD)

**GDP** US \$ 10,800 (per capita)

**Member of** IMF, OSCE...

### Export goods

87th world exporter.

iron and steel, non ferrous metal, electrical machines, raw materials, cereals textile, wood, pharmaceuticals, food.

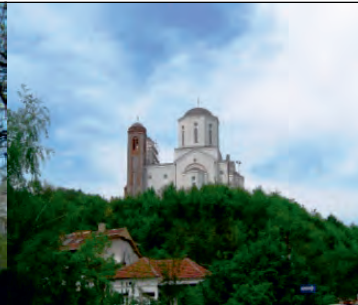




Saint Constantine Church  
Niš



Sts Peter and Paul Church  
Niš



Saint Lazar Church  
Vladičin Han



Santa Maria Church  
Žitordje



Phillip Morris International  
factory - Nis



Stephan  
Island



Termag Hotel  
Jahorina



AIK Bank  
Niš



Škoda showroom  
Belgrade



Pozorište Theatre  
Niš



Belgrade cemetery  
Orlovača

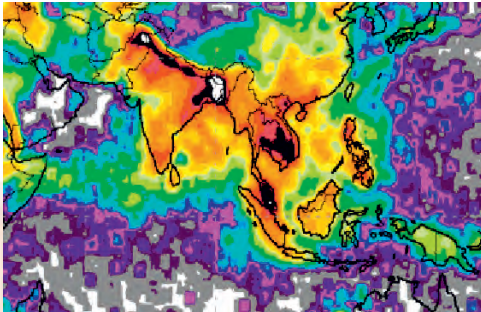


Nais Hotel  
Niš

# SINGAPORE



## Average lightning flash density



**Languages** English, Malay, Chinese, Tamil

**Capital** Singapore

**Total area** 693 km<sup>2</sup>

## Climate

tropical rainforest.

there is much more rain in the west to the east, the eastern part is much drier and slightly warmer than the western part.

## Natural resources

coal, oil, natural gas  
fish, deepwater ports.

**Population** 5,353,494

**Density** 7,725.1 (people per km<sup>2</sup>)

**Currency** Singapore Dollar (SGD)

**GDP** US \$ 60,500 (per capita)

**Member of** WTO, ASEAN, ICPAS, AFTA ...

## Export goods

13th exporter in the world.

mainly domestic products, chemicals, medical products, pharmaceuticals and electrical equipments.





NTU University  
Singapore



Chemical Plant  
Tuas



Banyan Tree Resort  
Pulau Bintan



Residential Bungalow  
Singapore



Tabernacle Christ Church  
Singapore



Police Coast Guards  
Singapore



Restaurant  
Mount Faber



Singapore Prison  
Changi



NUS Sport Center  
Singapore



St Luke's Hospital for  
Elderly



Police Coast Guard HQ  
Pulau Brani

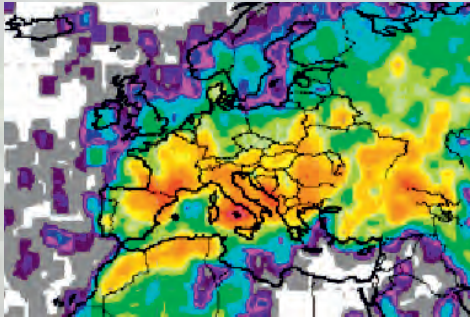


Victoria Park  
Residential units

# SLOVENIA



Average lightning flash density



**Language** Slovenian

**Capital** Ljubljana

**Total area** 20,273 km<sup>2</sup>

## Climate

Mediterranean climate along the coast.  
continental climate with warm and hot  
summers and cold winters

## Natural resources

lignite coal, lead, mercury, uranium,  
silver, hydropower.

**Population** 1,996,617

**Density** 98.5 (people per km<sup>2</sup>)

**Currency** Euro (EUR)

**GDP** US \$ 29,100 (per capita)

**Member of** EU, WTO, NATO ...

## Export goods

65th world exporter.

motor vehicles, electrical and electronic  
equipments, pharmaceuticals, fuels, food.





Hofer  
Ljubljana



Markovec Koper  
Koper



NLB Bank  
Ljubljana



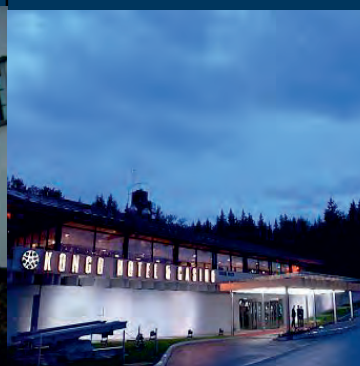
Petrol Station  
Starine



Nursing Home  
Vrhnika



Fuzine Castle  
Ljubljana



Kongo Hotel & Casino  
Grosuplje



Stanonik



Kovacic Private House



Marjeta Turk Private House



Sarlah Private House

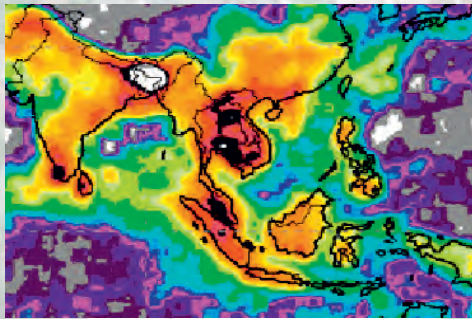


Home for workers  
Kranj

## SOUTH KOREA



Average lightning flash density



**Language** Korean

**Capital** Seoul

**Total area** 98,480 km<sup>2</sup>

### Climate

continental, tempered by oceanic influences.

winters cold.

summers hot, humid and rainy.

### Natural resources

sparse mineral resources: coal, tungsten, graphite, lead, hydroelectric potential.

program of reforestation.

**Population** 48,680,500

**Density** 496.1 (people per km<sup>2</sup>)

**Currency** South Korean Won (KRW)

**GDP** US \$ 32,100 (per capita)

**Member of** WTO, OECD, APEC, G 20...

### Export goods

7th world exporter.

Semiconductors, wireless telecommunication equipments, motor vehicles, computers, petrochemicals...





Dosan Seowon  
Andong



Suduk Temple  
Kyunsungam



Korea Aerospace Research  
Institute - Daejeon



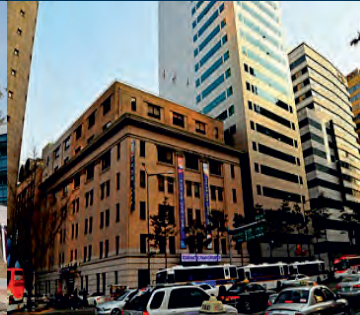
Police Comprehensive  
Academy - Seoul



Astronomy Weather Science  
Museum - Seosan



Cheonan City Hall  
Cheonan



Kepco central building  
Seoul



Woosong University  
Daejeon



World Cup Stadium  
Suwon



Hyecheon University  
Daejeon



World Cup Stadium  
Daejeon



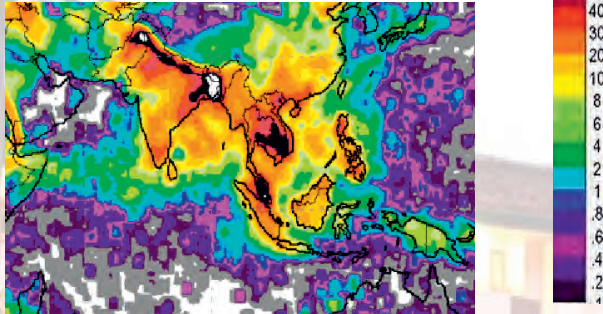
Nine bridges Golf Course  
Jeju Island



# SRI LANKA



## Average lightning flash density



**Language** Sinhala, Tamil

**Capital** Colombo

**Total area** 65,610 km<sup>2</sup>

### Climate

tropical climate.  
heat and humid on the coast  
moderate temperatures and drier climate in the mountains.

### Natural resources

graphite, mineral sands, phosphates, clay, hydroelectricity

**Population** 21,481,334

**Density** 327.4 (people per km<sup>2</sup>)

**Currency** Sri Lankan Rupee (LKR)

**GDP** US \$ 5,700 (per capita)

**Member of** WTO, SAFTA, Commonwealth...

### Export goods

95 th world exporter.

mainly agricultural products (tea, coffee, cinnamon, tobacco, spices, rice, fruit and vegetables), manufactured goods, textiles, diamonds, emeralds, rubies and oil.





Saman Villas  
Bentota



Aida Ayurveda Resorts  
Bentota



Temple of the Tooth  
Kandy



Tangerine Beach Hotel  
Kalutara



Mahaweli Reach Hotel  
Kandy



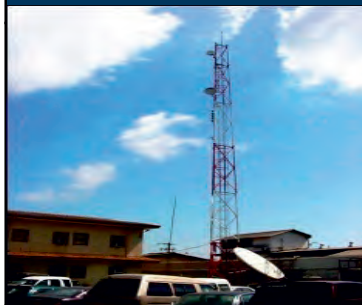
Estate Tea Factory  
Nuwara Eliya



Speaker's Official  
Residence



Royal Oceanic Beach Hotel  
Negombo



Transmission Tower  
Colombo



Royal Palms Hotel  
Kalutara



Hirdaramani Ltd  
Maharagama

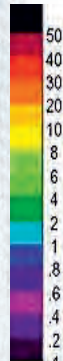
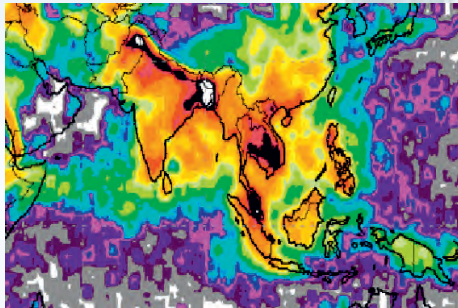


Butani Exports Ltd  
Rajagiriya

# THAILAND



Average lightning flash density



**Language** Thai

**Capital** Bangkok

**Total area** 514,000 km<sup>2</sup>

## Climate

warm, tropical climate affected by annual monsoon with a rainy season from June to October and a dry season the rest of the year.

## Natural resources

mineral deposits of gold, coal, tin, rubber, natural gas, tungsten, manganese, zinc, precious stones, timber, fish, prawns

**Population** 67,091,089

**Density** 130.5 (people per km<sup>2</sup>)

**Currency** Baht (THB)

**GDP** US \$ 9,500 (per capita)

**Member of** WTO, ASEAN, APEC, OSCE ...

## Export goods

25th exporting country in the world.

electrical appliances, computers, products machinery, vehicles, rubber rice, fishery and plastics.





Dhammakaya Temple  
Pathum Thani



National Museum  
Bangkok



Phu Ping Palace  
Chiang Mai



Navy Hall  
Bangkok



Toyota Motors  
Bangkok



FAO Building  
Bangkok



Siam Country Club  
Plantation Pattaya



International Trade &  
Exhibition Centre -Bangkok



Centara Grand at Central  
World - Bangkok



Rama VIII  
Bridge



Federation of Savings and  
Credit Cooperatives of  
Thailand

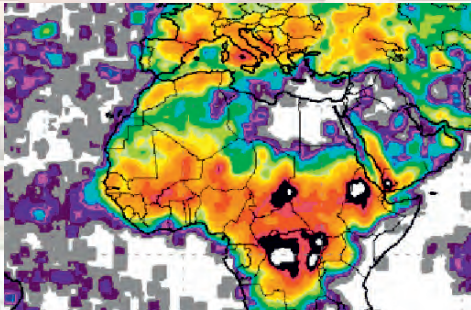


National Science Museum  
Bangkok

# TUNISIA



Average lightning flash density



**Language** Arabic, French

**Capital** Tunis

**Total area** 163,610 km<sup>2</sup>

## Climate

Mediterranean climate on the northern coast  
drier climate within the country.  
temperate in northern with mild and rainy winters.  
the summers are hot and dry in the south (desert).

## Natural resources

petroleum, phosphates, iron ore, lead, zinc, salt.

**Population** 10,732,900

**Density** 65.6 (people per km<sup>2</sup>)

**Currency** Tunisian Dinar (TND)

**GDP** US \$ 9,600 (per capita)

**Member of** WTO, Arab League, OSCE, UMA  
...

## Export goods

72th world exporter.

Mainly clothing and leather, mechanical and electrical products, food, and energy products.





7th November Stadium  
Tunis



Chemical Plant  
Gabes



Djerba Plaza  
Djerba



Ministry of Foreign Affairs  
Tunis



SIAPE phosphates factory  
Sfax



Hypermarket  
Tunis



El Mouradi Hotel  
Hammamet



International Fairs and  
Congress Center - Tunis



SONEDE  
Tunis



OAC  
Tunis



El Farabi Clinic  
Tunis

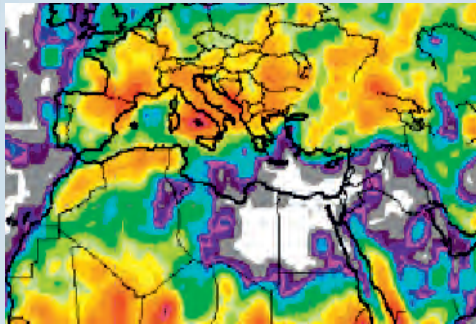


Tunisian Television HQ  
Tunis

# TURKEY



Average lightning flash density



**Language** Turkish

**Capital** Ankara

**Total area** 780,580 km<sup>2</sup>

## Climate

two main types of climate : temperate Oceanic climate and temperate Mediterranean climate.  
moderate dry summers, and cool to cold wet winters.

## Natural resources

coal, iron ore, copper, chromium, mercury, gold, emery, feldspar, magnesite, marble, perlite, pyrite (sulfur), clay, hydroelectricity.

**Population** 79,749,461

**Density** 102.1 (people per km<sup>2</sup>)

**Currency** Turkish Lira (TRY)

**GDP** US 14,700 (per capita)

**Member of** WTO, NATO, OECD, G20, OSCE...

## Export goods

32th world exporter.

mainly mining products, automotive, petroleum and food products (olive oil, citrus, dates, first world producer and exporter of hazelnuts)





International Airport  
Antalya



Lykia World Golf Resort  
Antalya



AKSA Energy Natural Gas  
Station



Kervansaray Hotel  
Antalya



Mirada Del Lago Hotel  
Erciyes



Adam & Eve Hotel  
Antalya



Lara Hills Villas  
Antalya



Ataturk Airport Tower  
Istanbul



Mirada Del Mar Hotel  
Antalya



SILKAR Plaza  
Istanbul



Aksa Power Plant  
Samsun

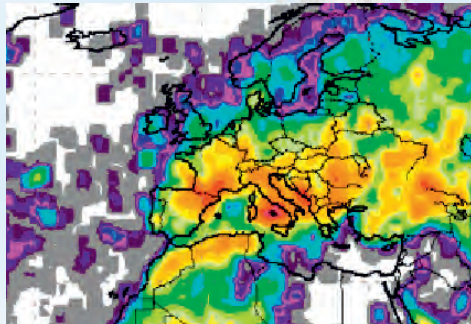


Shell Station  
Ambarli

# UNITED KINGDOM



Average lightning flash density



**Language** English

**Capital** London

**Total area** 244,820 km<sup>2</sup>

## Climate

temperate maritime climate: mild in summer and winter months are generally not very cold, weather subjected to frequent changes.

## Natural resources

coal, oil, natural gas, iron ore, lead, zinc, gold, tin, salt, clay, chalk, silica sand, slate.

**Population** 63,047,162

**Density** 257.5 (people per km<sup>2</sup>)

**Currency** British Pound (GBP)

**GDP** US \$ 36,000 (per capita)

**Member of** EU, WTO, NATO, OECD, G8, Commonwealth ...

## Export goods

9th world exporter.

manufactured goods and foodstuffs, fuels, chemicals, tobacco, military equipment, entertainment, computer softwares, finance, electronics...





Tower of London  
London



Kensington Palace  
Kensington



The Banqueting House  
Whitehall



Alhambra Theatre  
Bradford



Ashford International Hotel  
Ashford



The Balmoral Hotel  
Edinburgh



Hampton Court Palace  
East Molesey



Saint Paul's Church  
Jersey



De Montfort University  
Leicester



Thamesgate House  
Southend on Sea



Brownsover Hall Hotel  
Birmingham

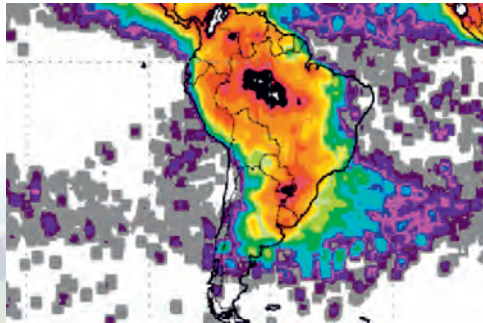


Royal Scot Hotel  
London

# URUGUAY



## Average lightning flash density



**Language** Spanish

**Capital** Montevideo

**Total area** 176,220 km<sup>2</sup>

### Climate

temperate, oceanic and humid subtropical climate.

rainfall throughout the year.

winter, winds are cold and very violent.

summer, hottest season of the year.

### Natural resources

minor minerals, fisheries, hydroelectricity

**Population** 3,316,328

**Density** 18.8 (people per km<sup>2</sup>)

**Currency** Uruguayan Peso (UYU)

**GDP** US \$ 15,300 (per capita)

**Member of** WTO, OAS ...

### Export goods

100 th world exporter.

economy is focused on exporting of agricultural products (meat, rice, wool, fish, dairy products) but the country exports also manufactured products, and food.





Paycueros Tannery  
Paysandu



School  
Artigas



Airport  
Colonia



Greenfield Building  
Canelones



International Airport  
Maldonado



Carrasco Airport  
Montevideo



Portones de Carrasco  
Montevideo



Private House  
Maldonado



Inca Paints  
Montevideo



School  
Fray Bentos



Airport  
Salto

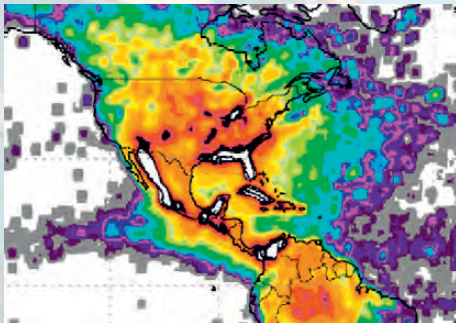


L.A.T.U. Laboratory  
Montevideo

# USA



Average lightning flash density



**Language** English

**Capital** Washington D.C.

**Total area** 9,631,420 km<sup>2</sup>

## Climate

wide variety: humid continental in the north to humid subtropical in the south. Southern tip of Florida: tropical, Great Plains are semi arid, Rocky mountains are alpine, Mediterranean in coastal California, oceanic in coastal Washington, sub arctic in Alaska, hurricanes and tornadoes in the Midwest.

## Natural resources

water, oil, coal, copper, phosphates, uranium, gold, iron, mercury, nickel, silver, tungsten, petroleum, natural gas, timber...

**Population** 314,192,965

**Density** 32.6 (people per km<sup>2</sup>)

**Currency** United States Dollar (USD)

**GDP** US \$ 49,000 (per capita)

**Member of** WTO, NATO, NAFTA, G8 ...

## Export goods

2nd world exporters.

high technology products, petroleum, steel, motor vehicles, aerospace, military products. chemicals, consumer goods...





Denver Cathedral  
Denver



Historic Tivoli Brewery  
Denver



Central Library  
Denver



Recreation Center  
Thornton



Corbin J. Robertson  
Recreation Center



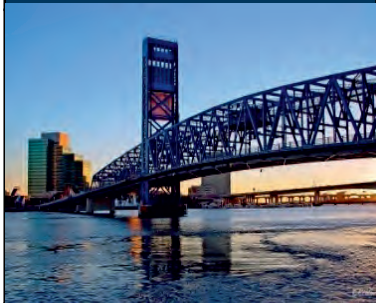
National Atmospheric  
Research Center - Boulder



Northern Colorado Medical  
Facility



Missouri Veterans Home  
Saint James



Main Street Bridge  
Jacksonville



National Renewable Energy  
Laboratory - Golden



Regional Medical Center  
St. Luke's

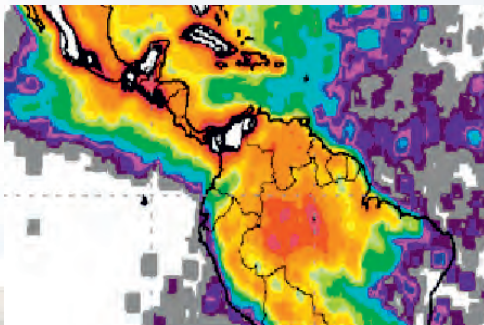


Phillips Petroleum Corp.  
Headquarters - Bartlesville

# VENEZUELA



Average lightning flash density



**Language** Spanish

**Capital** Caracas

**Total area** 912,050 km<sup>2</sup>

**Climate**  
tropical, hot, humid, more moderate in highlands

**Natural resources**  
petroleum, oil, natural gas, mining, hydroelectricity, iron ore, gold, bauxite, other minerals, diamonds.

**Population** 28,047,938

**Density** 30.7 (people per km<sup>2</sup>)

**Currency** Bolivar fuerte (VEF)

**GDP** US \$ 12,700 (per capita)

**Member of** WTO, OPEP, CELAC, OPEC, NASUR, IMF, ...

**Export goods**  
46th world exporter.  
petroleum, chemicals, agricultural products...





CanTV  
Caracas



Lido Shopping Mall  
Caracas



Corpoven Refinery  
Falcon



CIED-PDVSA Offices  
Caracas



Court of Justice  
Caracas



Pequiven Petrochemical  
Plant –Anzoategui



Procter & Gamble  
Caracas



San Bernardino Medical  
Caracas



Siemens Substation  
Caracas



Procter & Gamble Plant  
Caracas

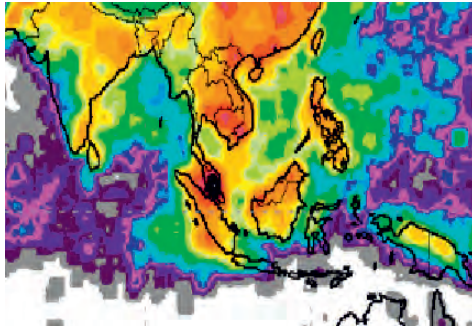


UCV University  
Caracas



ING Bank Building  
Caracas

# VIETNAM



**Language** Vietnamese

**Capital** Hanoi

**Total area** 329,560 km<sup>2</sup>

## Climate

tropical and temperate zone with strong monsoon influences (considerable amount of sun, high rate of rainfall and high humidity), the rainy season lasts from May to November.

## Natural resources

phosphates, coal, bauxite, chromate, off shore oil and gas deposits, manganese... forests, hydropower.

**Population** 91,519,289

**Density** 277.7 (people per km<sup>2</sup>)

**Currency** Dong (VND)

**GDP** US \$ 3,400 (per capita)

**Member of** WTO, APEC, ASEAN...

## Export goods

39th world exporter.

clothes, shoes, marine products, electronics, crude oil, rice, coffee and seafood.





French consulate  
HCMC



The Custom Office  
HCMC



State Bank  
HCMC



Ministry of Agriculture  
HCMC



Yoco office building  
HCMC



City Guesthouse  
HCMC



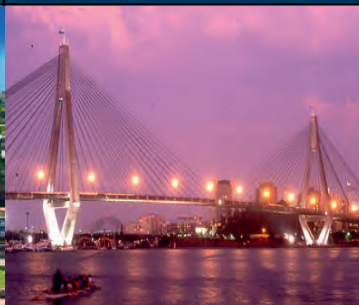
Saigon Port Office  
HCMC



EPCO hotel  
HCMC



Big C supermarket  
Dong Nai



Rach Mieu Bridge  
Ben Tre



Cement plant  
Ha Tien



Morning Star cement plant  
HCMC

## PREVECTRON® 2 ESE AIR TERMINAL

The PREVECTRON®2 is operating in three stages:

The ionization device is charged via the lower electrodes using the ambient electrical field (several million volts/meter when storms are prevalent). This means the PREVECTRON®2 is a fully autonomous system requiring no external power supply.



The ionization phenomenon is controlled by a device which detects the appearance of a downward leader: the local electrical field increases rapidly when a discharge is imminent. The PREVECTRON®2 detects changes within the field, making it the only E.S.E. air terminal to react at the precise moment the downward leader develops from the cloud to the ground.

Early triggering of the upward leader using a system of spark ionization between the upper electrodes and the central tip. The PREVECTRON®2's ability to trigger an upward leader ahead of any other protruding point within the protected area ensures it will be the preferential point of impact for the lightning discharge.

Following the publication of revised standards and testing requirements in September 2011, the full Prevelectron®2 range has been successfully re-tested in High Voltage laboratories. Independent third-party test certificates of compliance and reports are available.

In addition, INDELEC has published in major Scientific Conferences and Symposiums the results of its tests in real lighting conditions, which highlights the reliability and effectiveness of the Prevelectron®2 lightning rods.



## INDELEC RANGE



Risk Management is a must for an increasing number of industries and operators. The optimum protection of the structure is a primarily requirement but the tracking of lightning events represents a real added value for safety management team. INDELEC has developed for this purpose Lightning Counters which includes, in its latest version, advanced capabilities such as date/time of the lightning discharge as well as its intensity and polarity. The full Counter range meets the NF EN 50164-6 standard requirements and is tested in high voltage laboratories.

Based on the IEC 62-305 series (2006), a lightning protection system must now combine direct and indirect lightning protection : the electromagnetic disturbances created by a lightning discharges are representing a growing danger (overvoltage, fast ageing ...) due to the increasing sensitivity of the M&E equipment (computerization, very low voltage systems etc...). INDELEC lightning protection systems design includes the supply and installation of Surge Protection Devices (SPD) for the main switchboard (type 1), DB's (type 2) as well as specific SPD for Telecom network, data networks, coaxial cable, DC power supply etc...



Creating and maintaining a safe working environment is essential to an increasing number of industries and facilities. The fundamental concept of INDELEC's Stormonitor® is to provide timely advanced warning of an increasing threat of lightning to personnel, equipment, and facilities. Warning is followed by actions to cease dangerous project operations, to place equipment in safe configurations, and to shelter individuals safely until the lightning threat has ended.

