

Lunes 28 y Martes 29, Noviembre 2011. Palacio Villa Suso, Vitoria-Gasteiz
2011ko azaroaren 28a (astelehena) eta 29a (asteartea). Goiuriko Jauregia, Vitoria-Gasteiz

X Edizioa
Edición

2011 Euskal Hiria Kongresua



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PLANIFICACIÓN TERRITORIAL,
AGRICULTURA Y PESCA



FUNDACIÓN METROPOLI

Lunes 28 y Martes 29, Noviembre 2011. Palacio Villa Suso, Vitoria-Gasteiz
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Sesión / Saioa 2, 28.11.11

Territorio y demanda energética: eficiencia, ahorro y suficiencia

*Lurraldea eta energia-eskaria:
eraginkortsuna, aurrezpena eta nahikotasuna*

Dr. Ramon Folch
Presidente de ERF



An aerial, high-angle view of a dense urban landscape, likely a major city center. The image shows a vast number of skyscrapers and high-rise buildings packed closely together. The buildings vary in height and architectural style, with many featuring grid-like window patterns. The overall color palette is muted, with shades of grey, blue, and brown, giving it a somewhat desaturated or historical appearance. The perspective is from directly above, looking down on the city's layout.

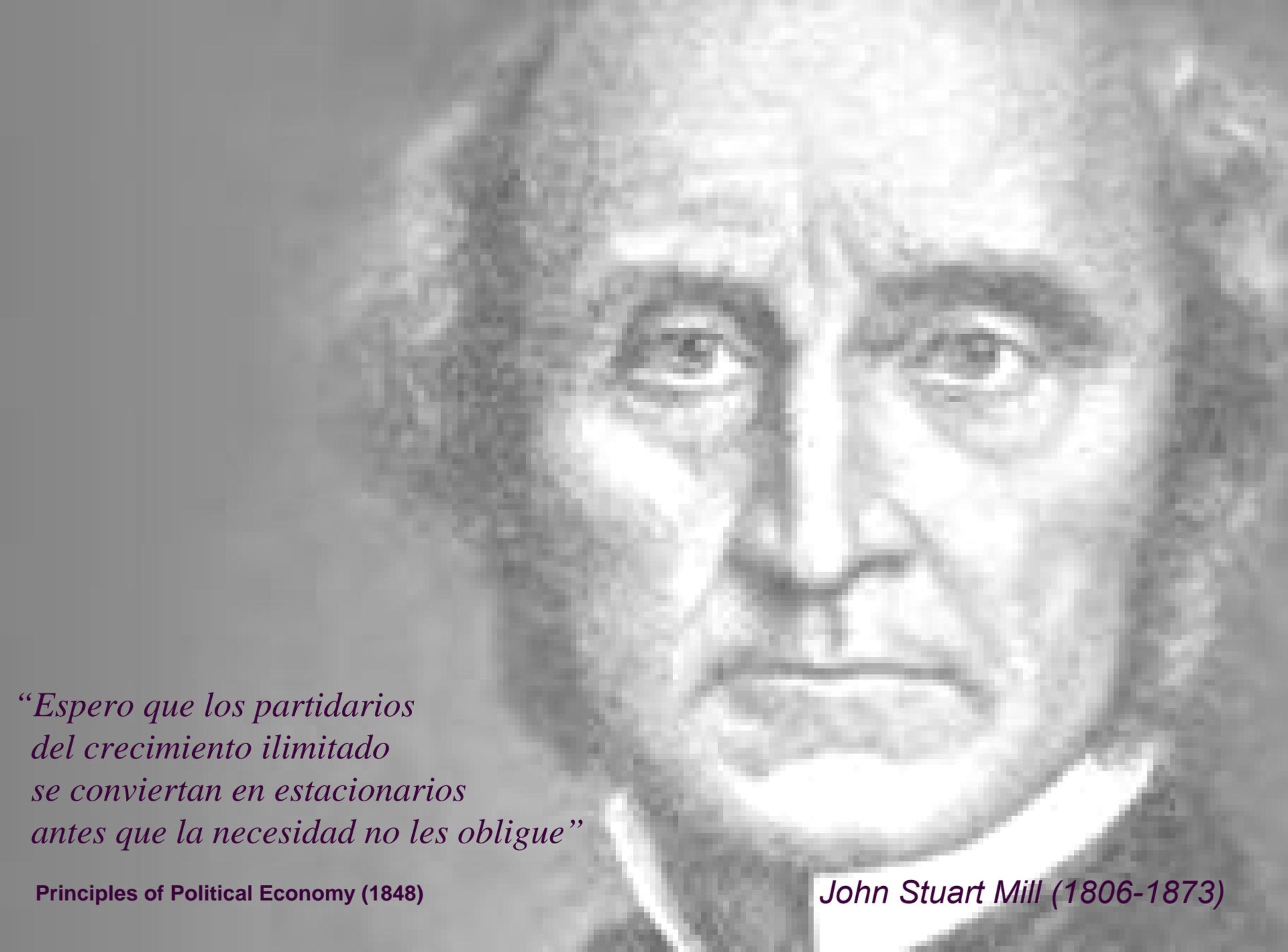
Introducción



*“Si el incremento de capital
es gradual y constante,
la demanda de trabajo estimulará
el crecimiento continuo”*

David Ricardo (1772-1823)

On the Principles of Political Economy (1817)



*“Espero que los partidarios
del crecimiento ilimitado
se conviertan en estacionarios
antes que la necesidad no les obligue”*

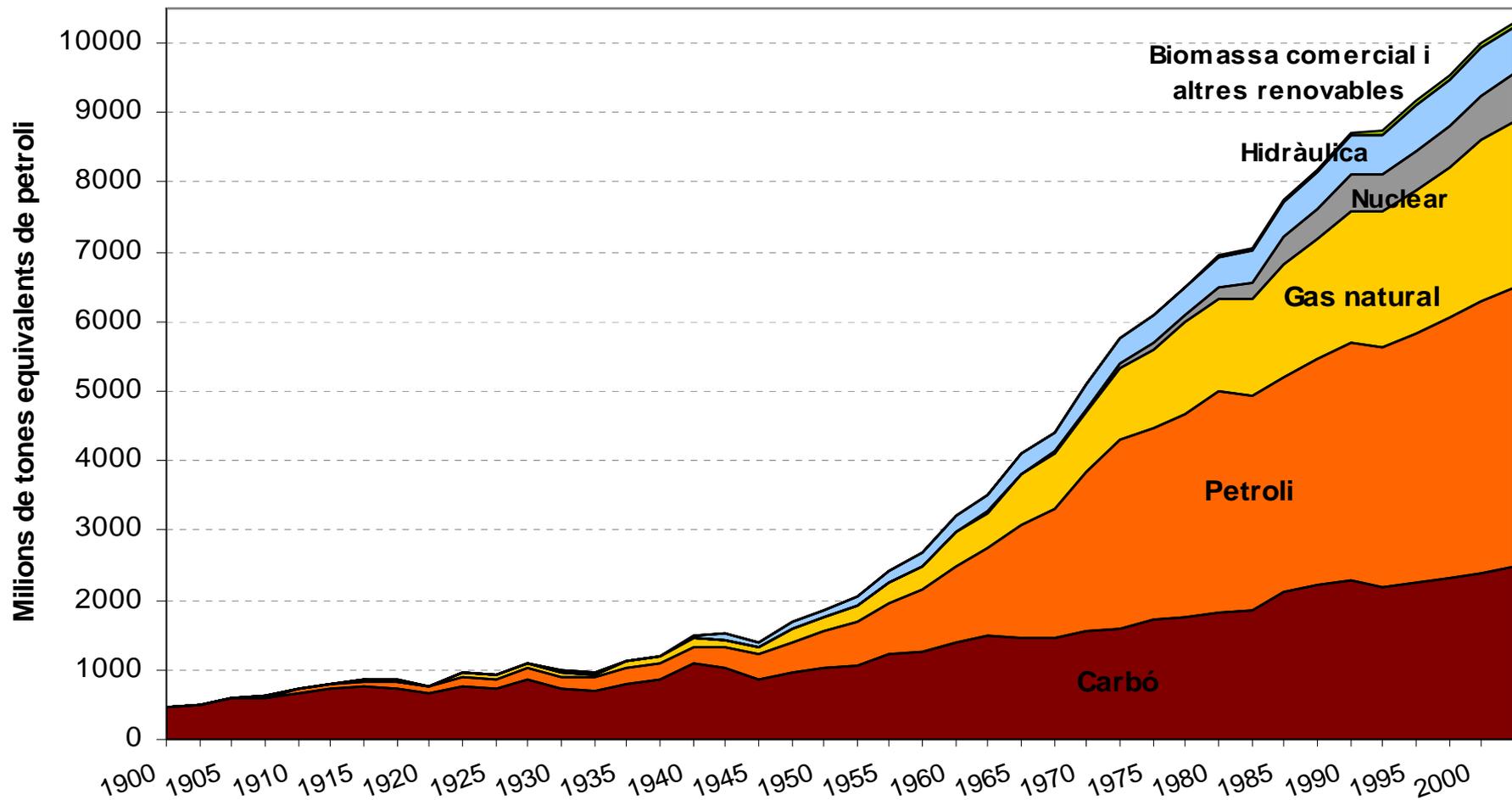
Principles of Political Economy (1848)

John Stuart Mill (1806-1873)

An aerial, high-angle view of a dense urban landscape, likely a major city like New York City. The image shows a vast array of skyscrapers and high-rise buildings, creating a complex, textured pattern of vertical lines and rectangular forms. The perspective is from directly above, looking down on the city. The overall color palette is muted, with various shades of grey, blue, and brown, giving it a somewhat desaturated, architectural feel. The text 'La demanda energética' is overlaid in the center in a bold, black, serif font.

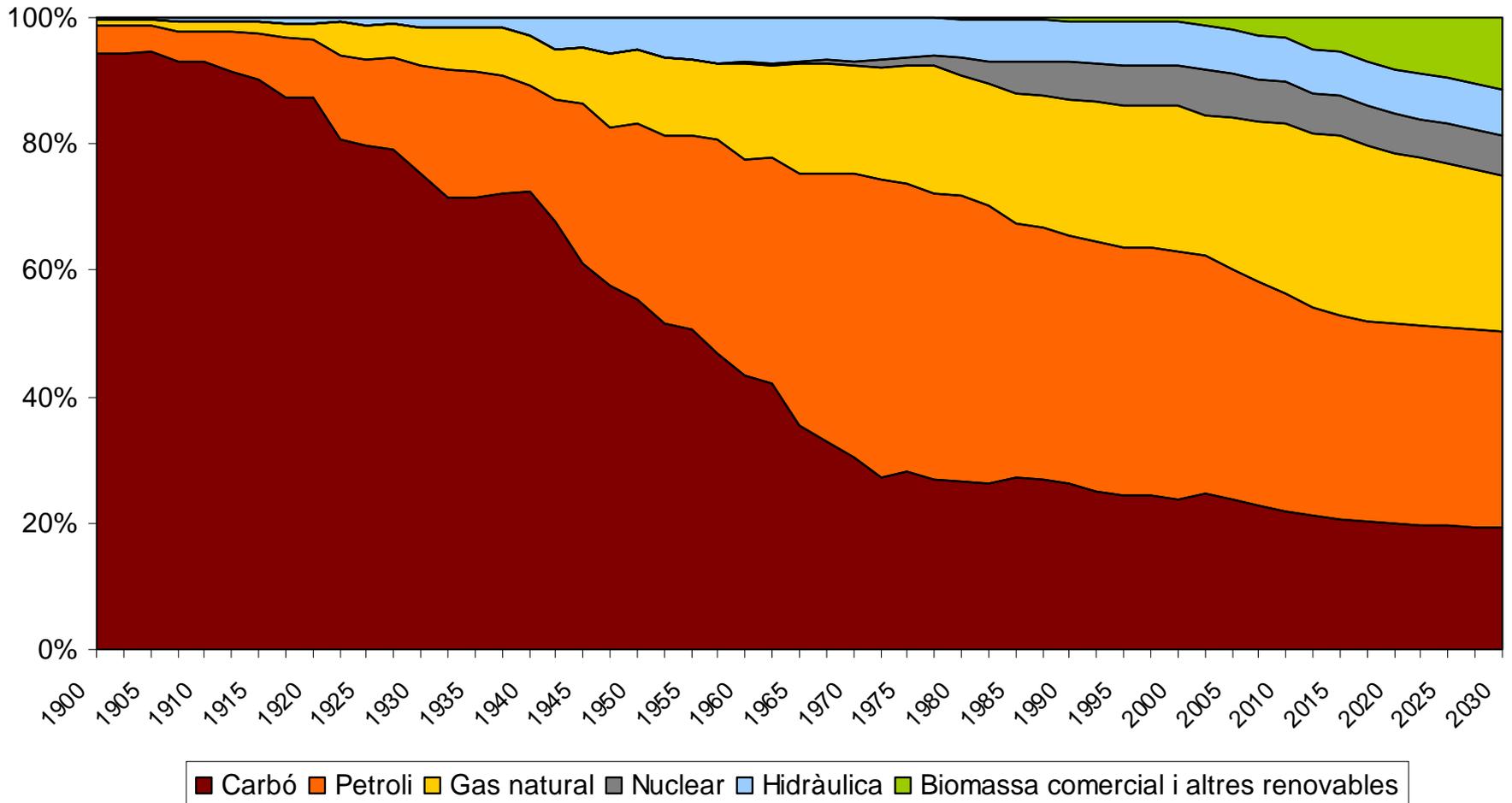
La demanda energética

Evolución del consumo mundial de energía primaria (Mtep_e)



Fuente: Energy Information Administration, EIA (2002)

Evolución del consumo mundial de energía primaria (% de cada fuente)



Fuente: Energy Information Administration, EIA (2002) y estimaciones propias

1800

1.000.000.000

1900

2.000.000.000

2000

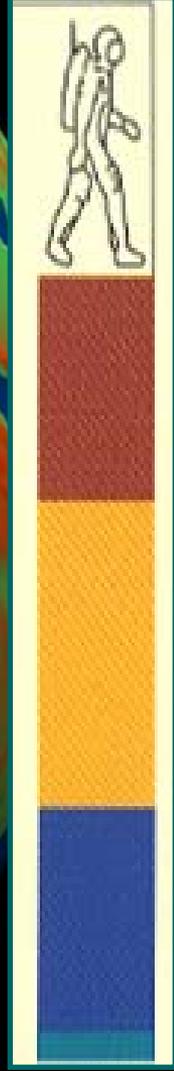
6.000.000.000

2011

7.000.000.000

1800

2011



ALIMENTACIÓN

ACTIVIDADES DOMÉSTICAS Y SERVICIOS *

INDUSTRIA Y AGRICULTURA

TRANSPORTE

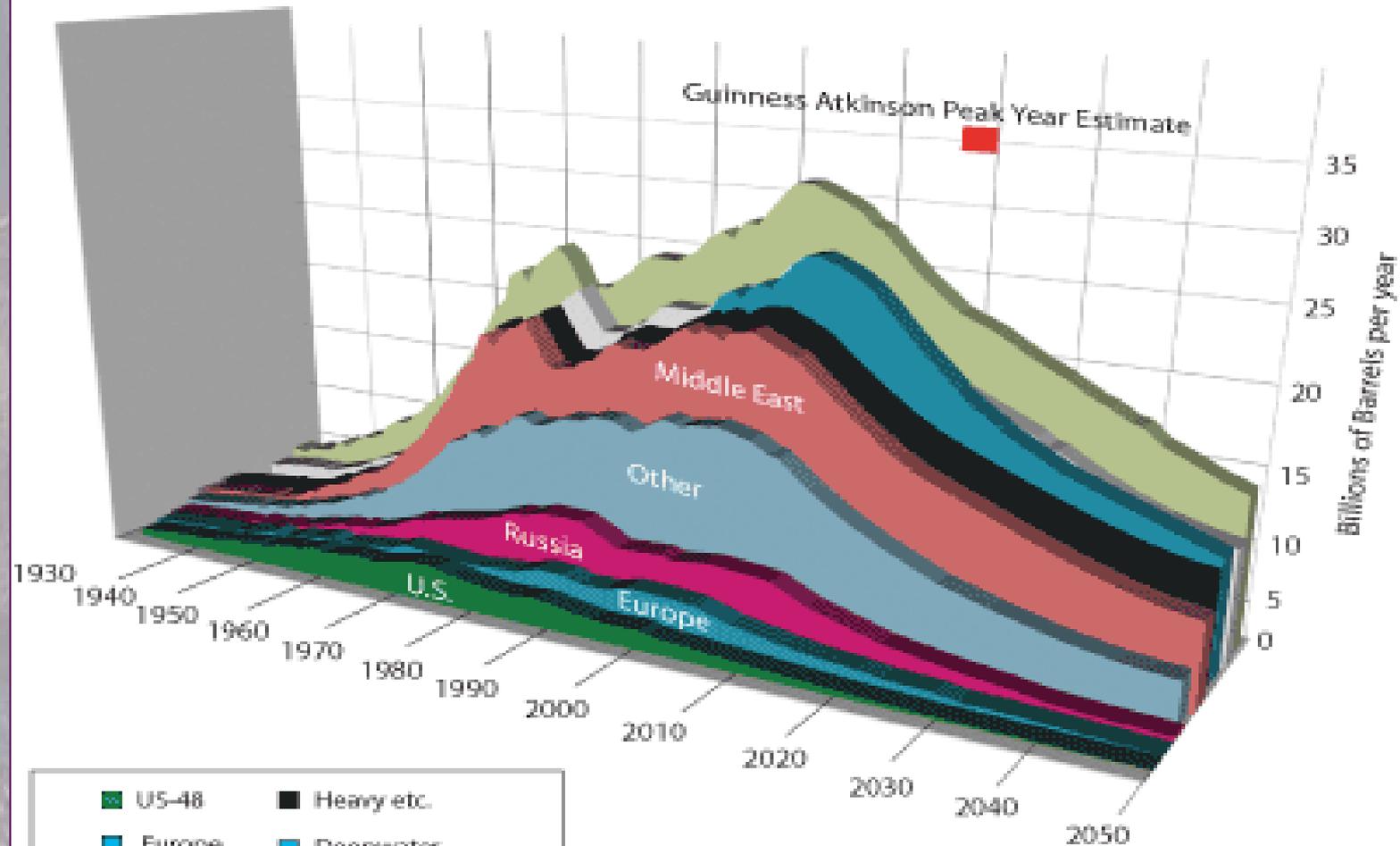
* El sector de los servicios comprende los trabajos de oficina, el comercio, la enseñanza, etc.







Hubbert Curve Projection of Global Oil and Natural Gas Liquids Production



- U.S.-48
- Europe
- Russia
- Other
- MEast
- Heavy etc.
- Deepwater
- Polar
- Natural Gas Liquids

Source: The Association for the Study of Peak Oil and Gas, C.J. Campbell, June 2004

The world's proven oil reserves

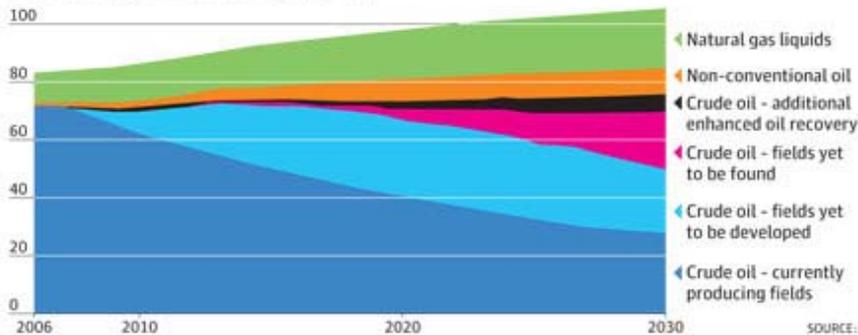
Billion barrels



SOURCE: STATISTICAL REVIEW OF WORLD ENERGY

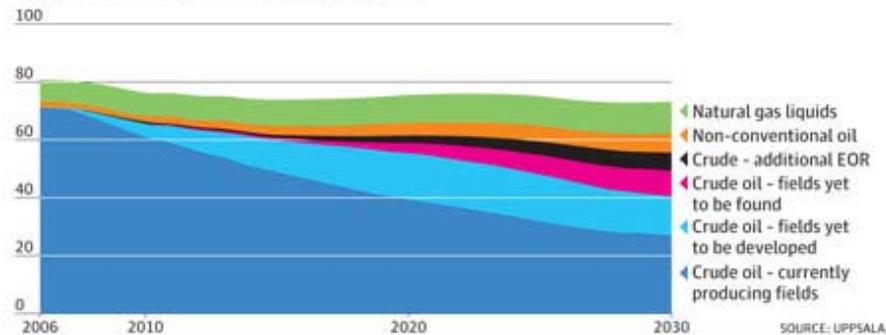
Contrasting views Two forecasts for global oil production

IEA forecast, million barrels per day



SOURCE: IEA

Uppsala forecast, million barrels per day



SOURCE: UPPSALA



Eficiencia



Ahorro







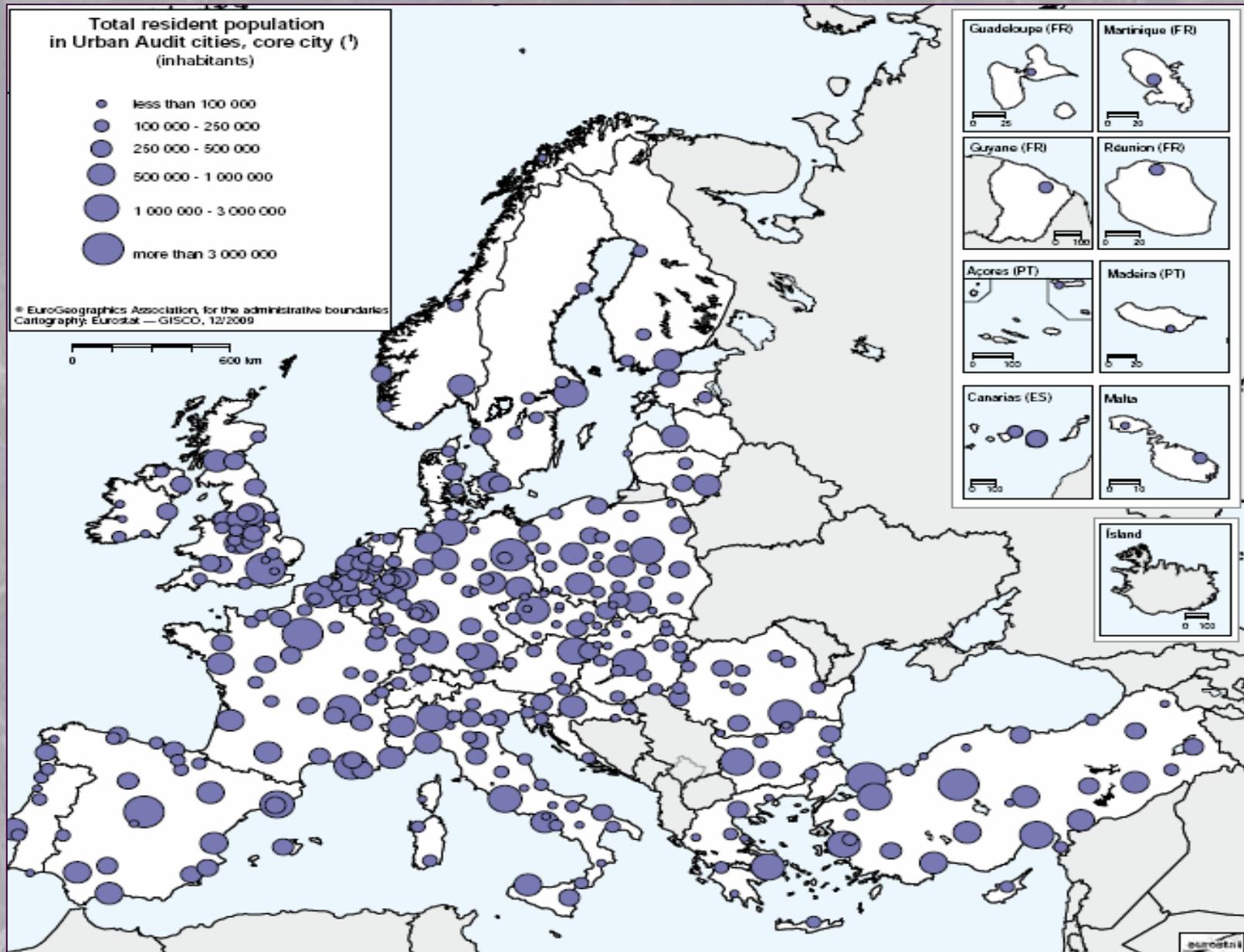
Suficiencia

An aerial, high-angle view of a dense urban landscape, likely a major city like New York City. The image shows a vast array of skyscrapers and high-rise buildings, creating a complex, textured pattern of vertical lines and rectangular forms. The colors are muted, with various shades of grey, blue, and brown, giving it a somewhat desaturated, architectural feel. The perspective is from directly above, looking down on the city's grid and the way buildings are packed together.

**Un territorio
de ciudades energodependientes**

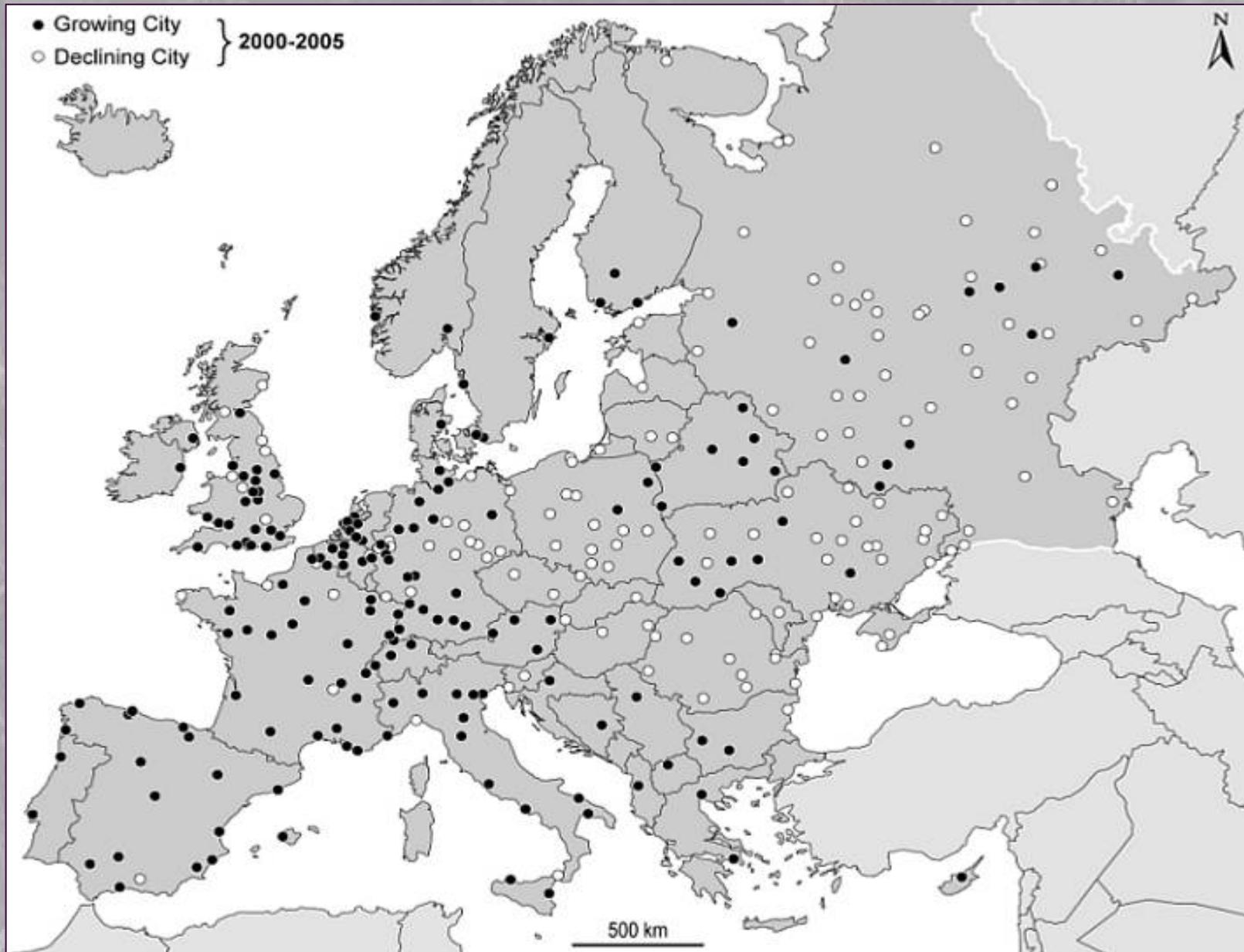


Grandes ciudades y conurbaciones europeas (2006)



Fuente: Eurostat-GISCO (2009)

Grandes ciudades y conurbaciones europeas (en crecimiento-mengua 2006)



Red europea de transporte eléctrico (2009)



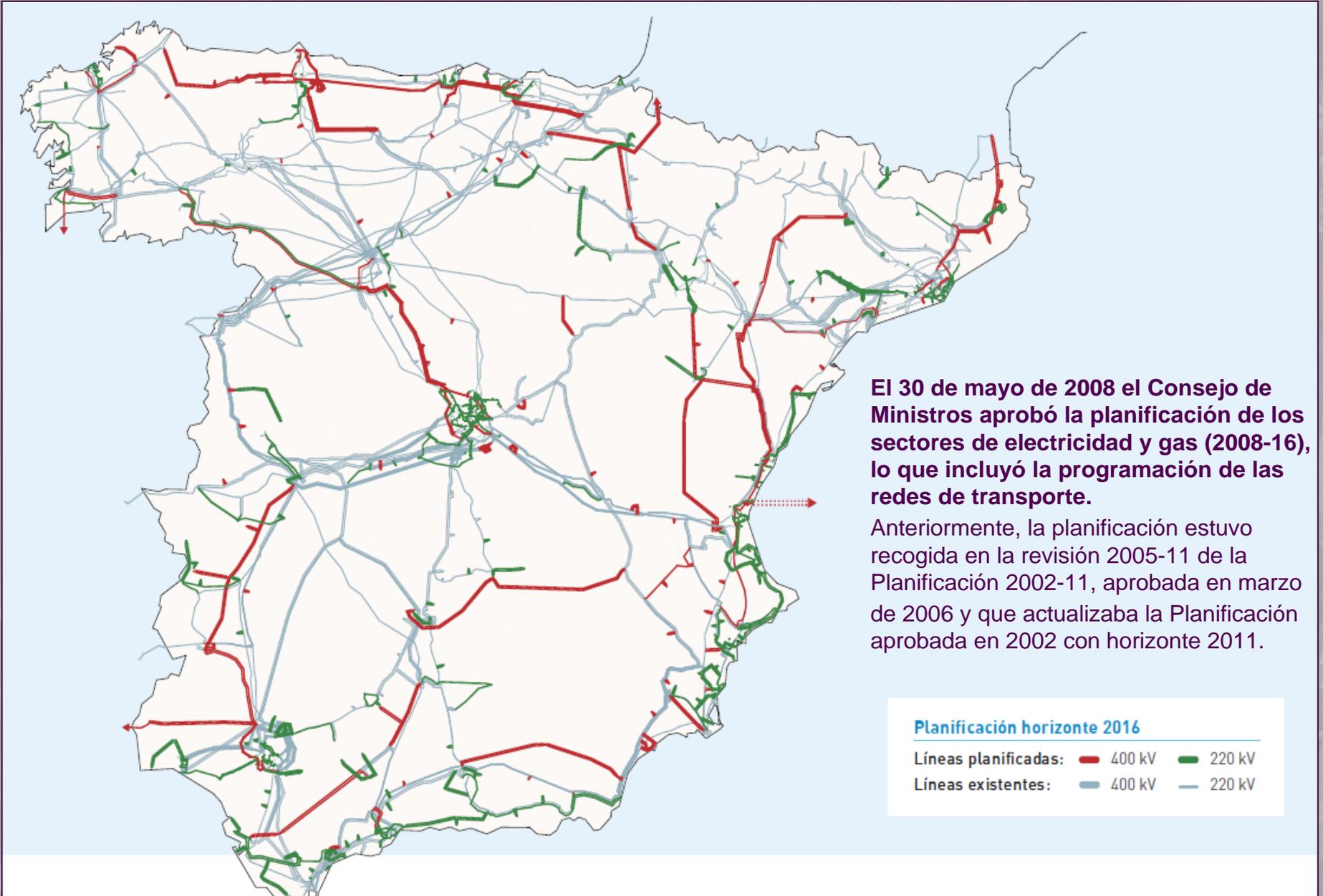
Fuente: Geoff Zeiss, *Between the Poles* (2011)

Red básica europea de oleoductos y gaseoductos (2008)



Fuente: *The World Fact Book* (2008)

Red de transporte eléctrico de REE (existente 2010 y programada 2016)



El 30 de mayo de 2008 el Consejo de Ministros aprobó la planificación de los sectores de electricidad y gas (2008-16), lo que incluyó la programación de las redes de transporte.

Anteriormente, la planificación estuvo recogida en la revisión 2005-11 de la Planificación 2002-11, aprobada en marzo de 2006 y que actualizaba la Planificación aprobada en 2002 con horizonte 2011.

Planificación horizonte 2016

Líneas planificadas: 400 kV 220 kV
Líneas existentes: 400 kV 220 kV



An aerial, high-angle view of a dense urban skyline, likely New York City, showing numerous skyscrapers and a grid of streets. The image is semi-transparent, serving as a background for the text.

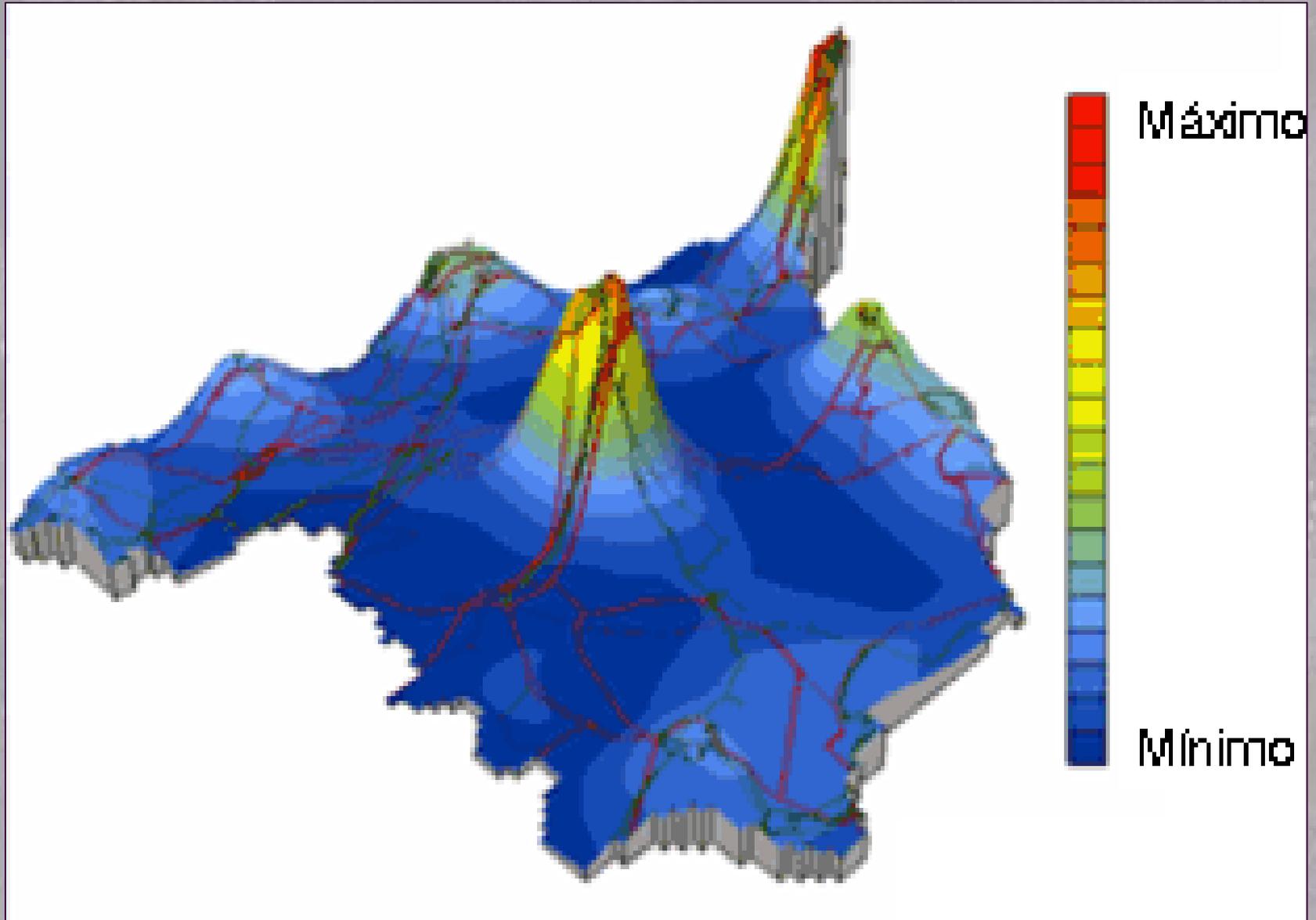
**Hacia una menor
dependencia energética urbana**



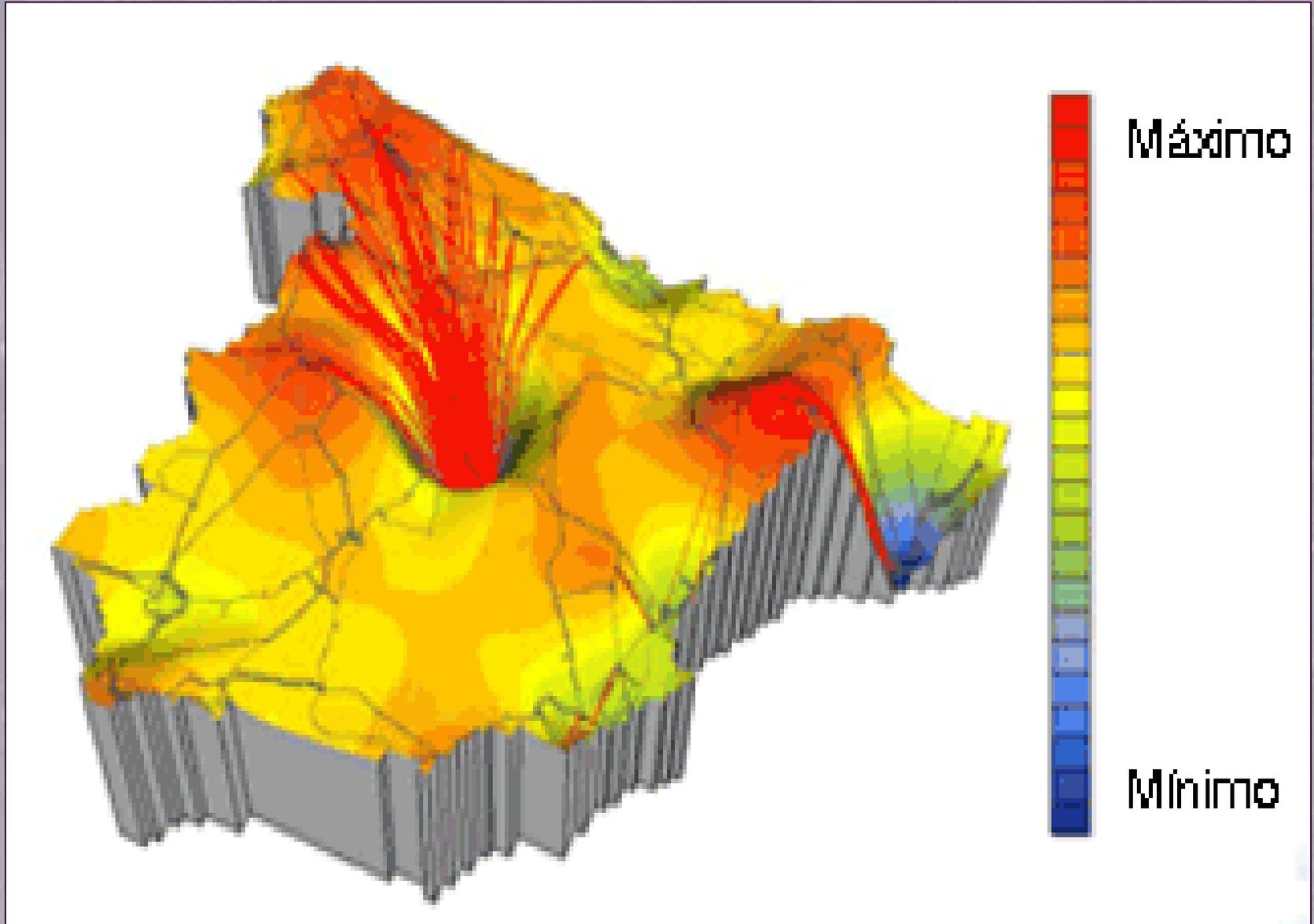


- Fuerza motriz
- Generación térmica (frío y calor)
- Iluminación
- Electrónica (telecomunicaciones, informática,...)

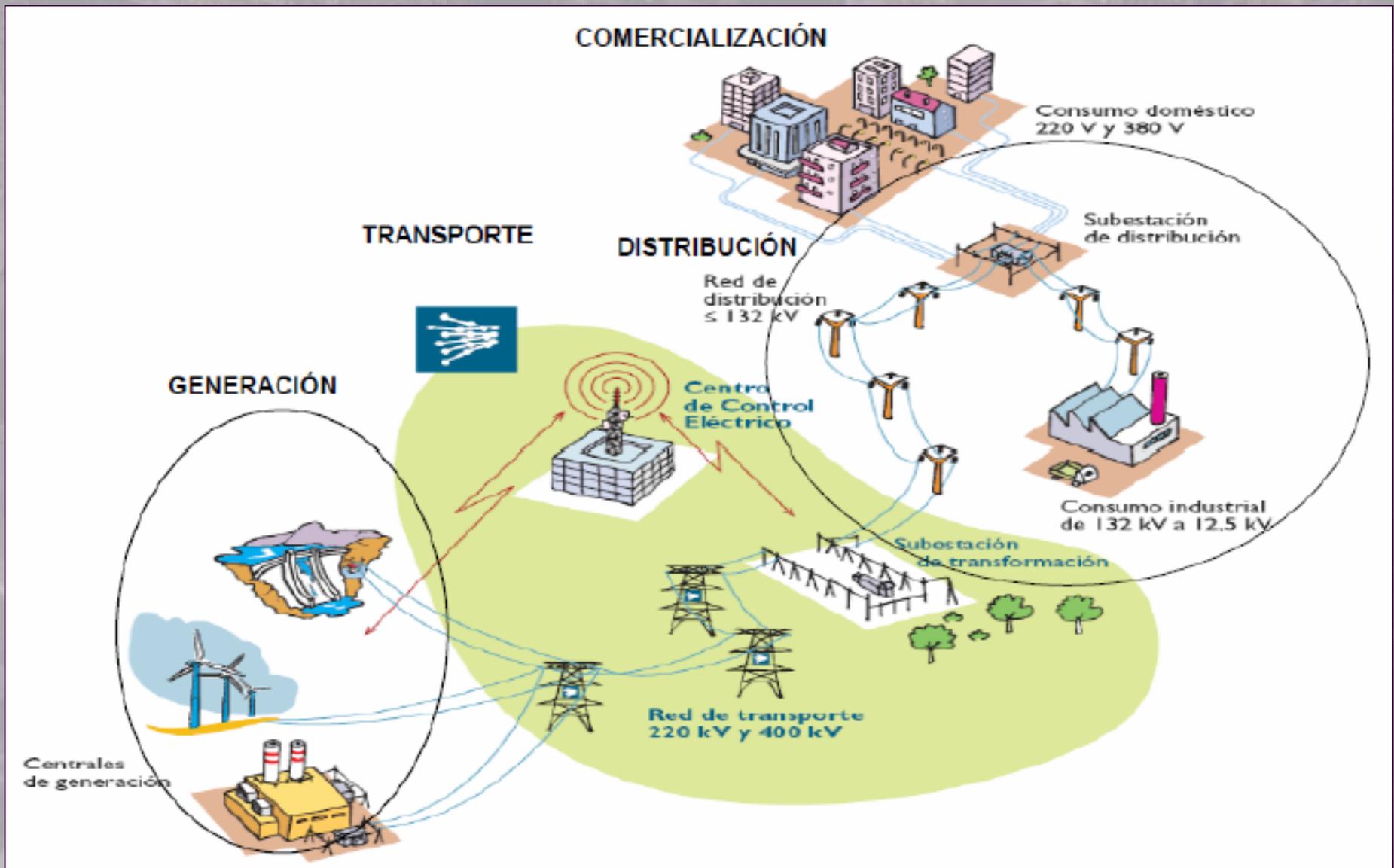
Isozonas de demanda eléctrica (2008)



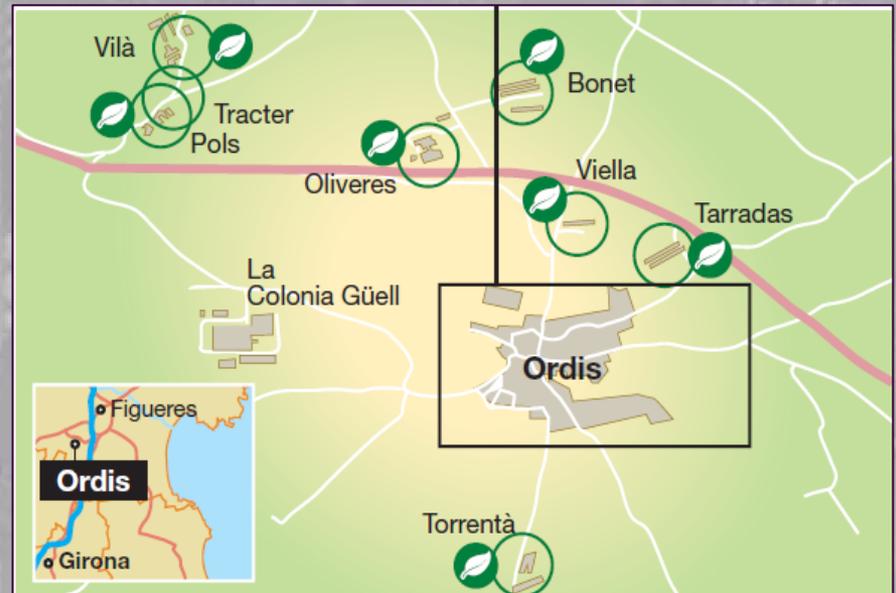
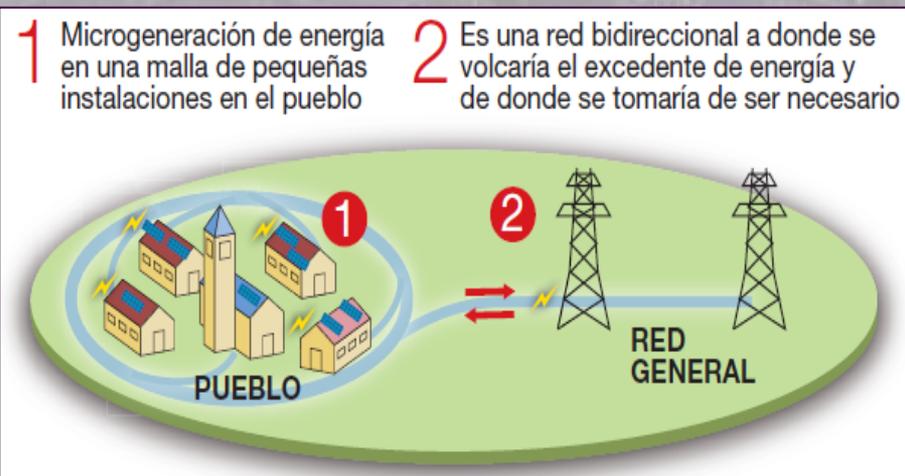
Isozonas de generación eléctrica (2008)

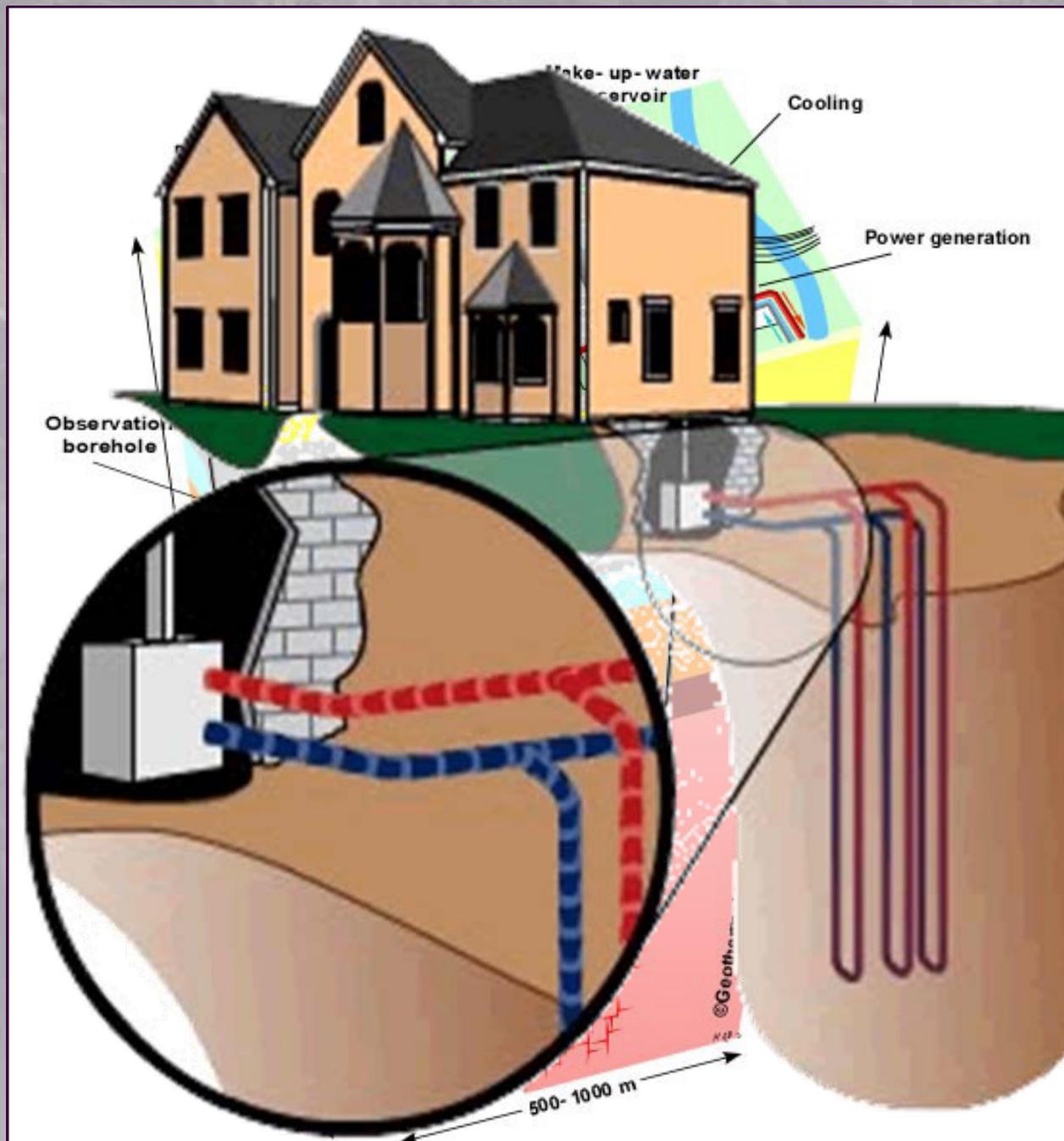


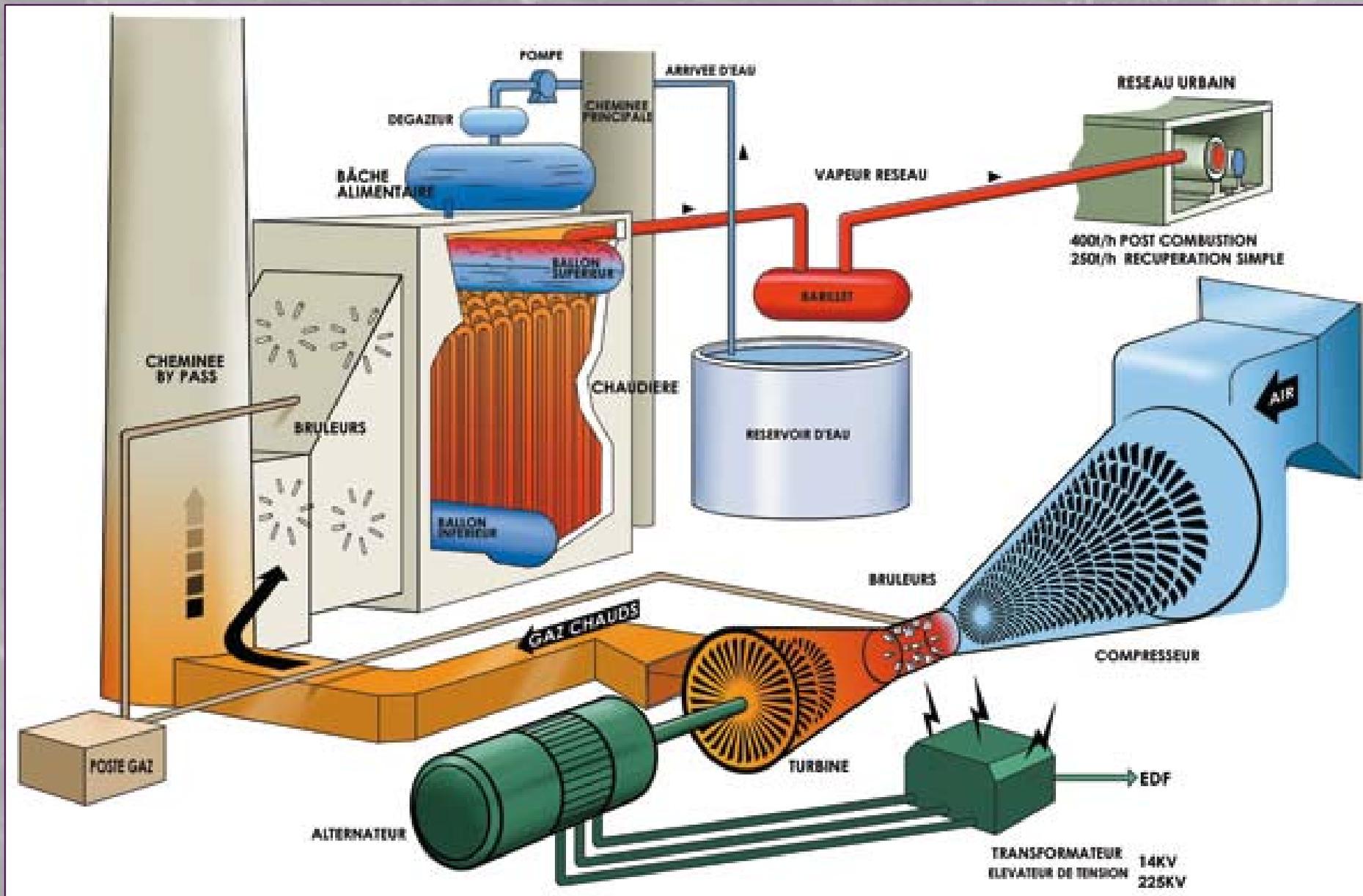
La generación eléctrica centralizada

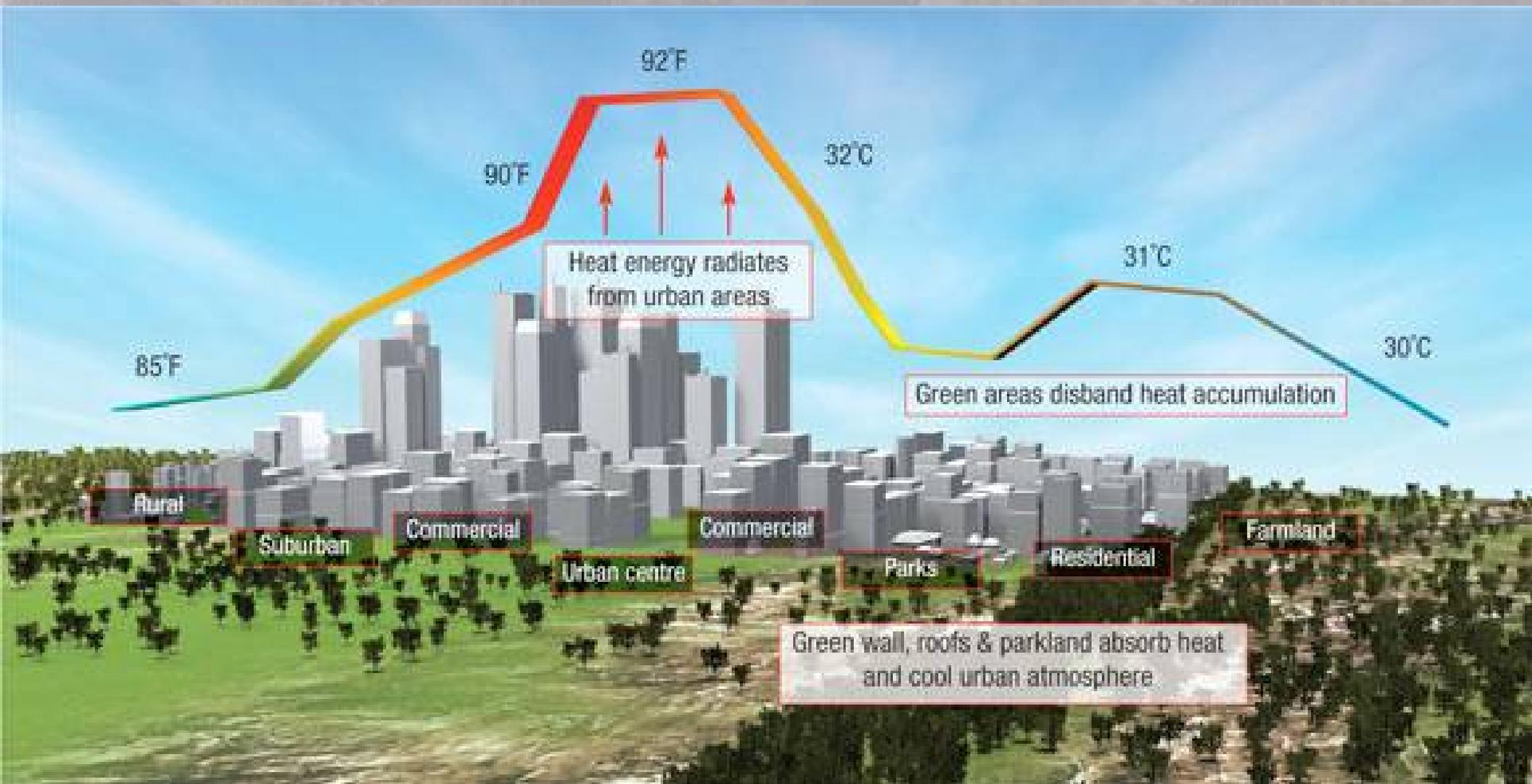


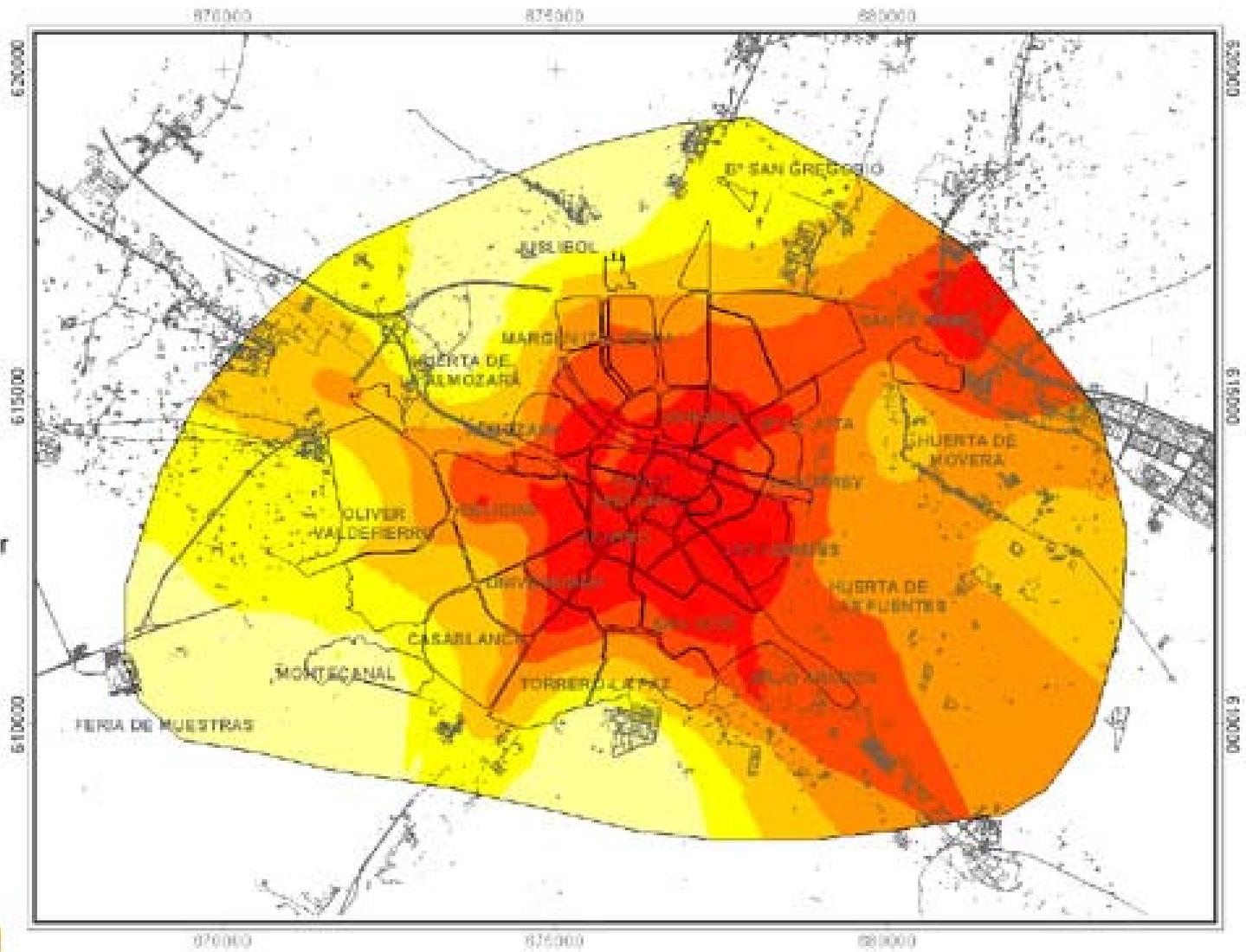
La generación eléctrica distribuida: el caso de Ordis (Alt Empordà, Cataluña [372 hab])



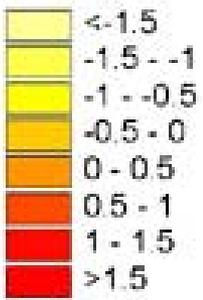








Desviaciones estándar respecto a la media:

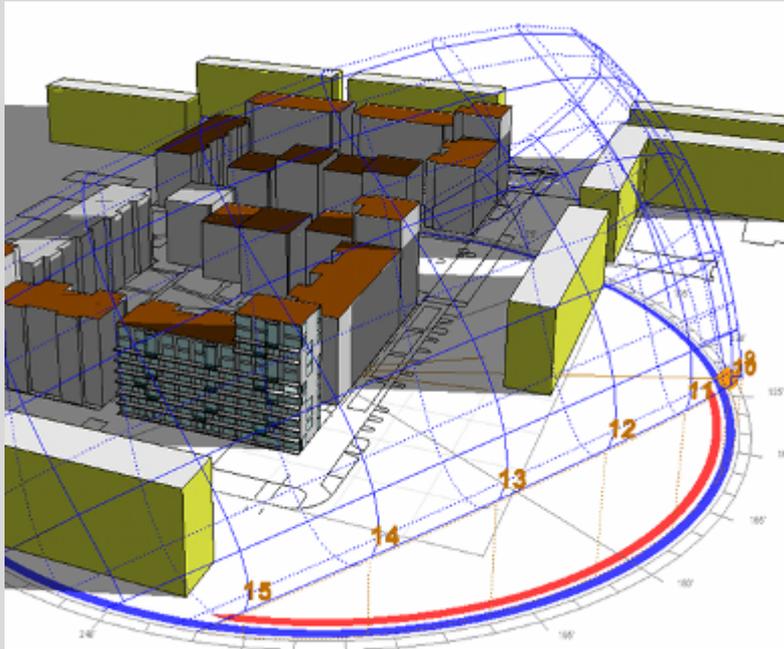


MAPA TÉRMICO PROMEDIO DE ZARAGOZA

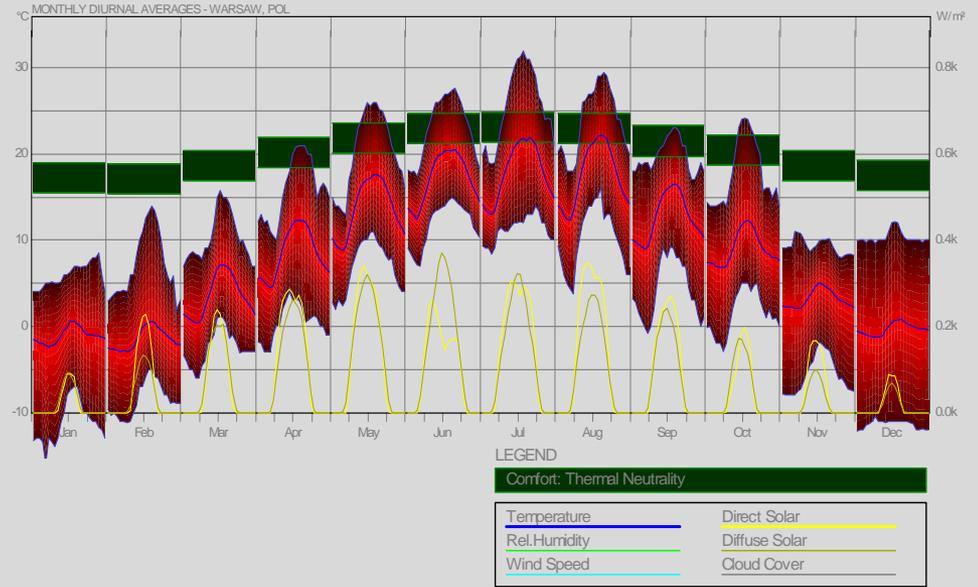


**Termografía
de un sector de Marsella (2007)**

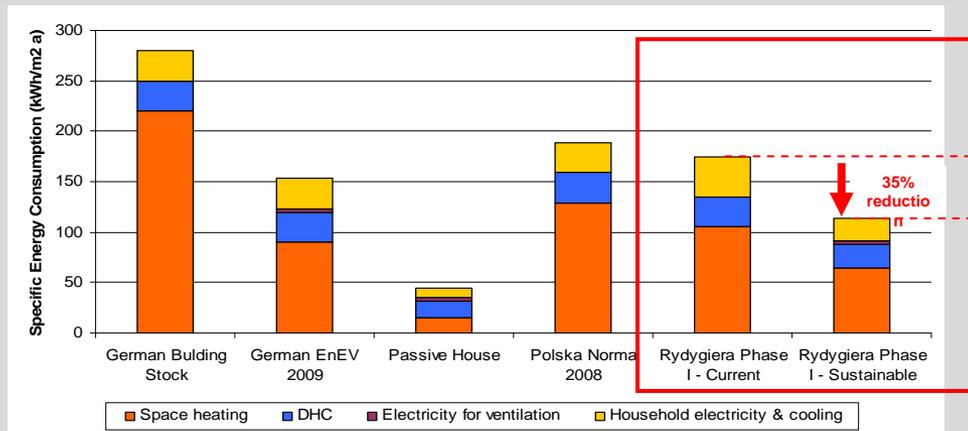




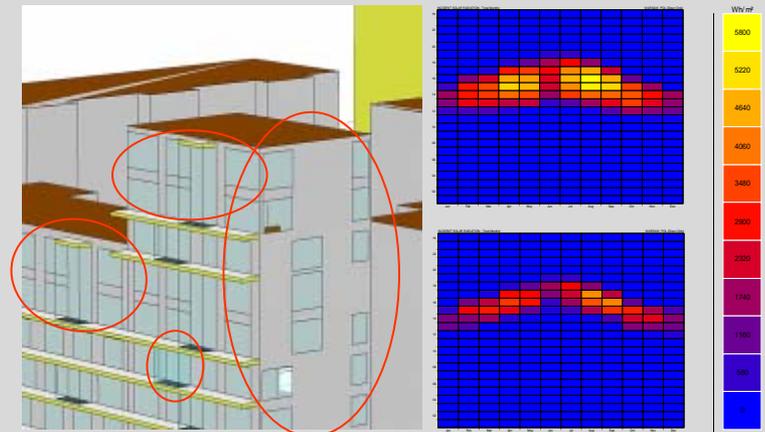
Análisis de soleamiento y sombras



Análisis parámetros climáticos y condiciones de confort



Consumo energético de distintos tipos de edificio residenciales



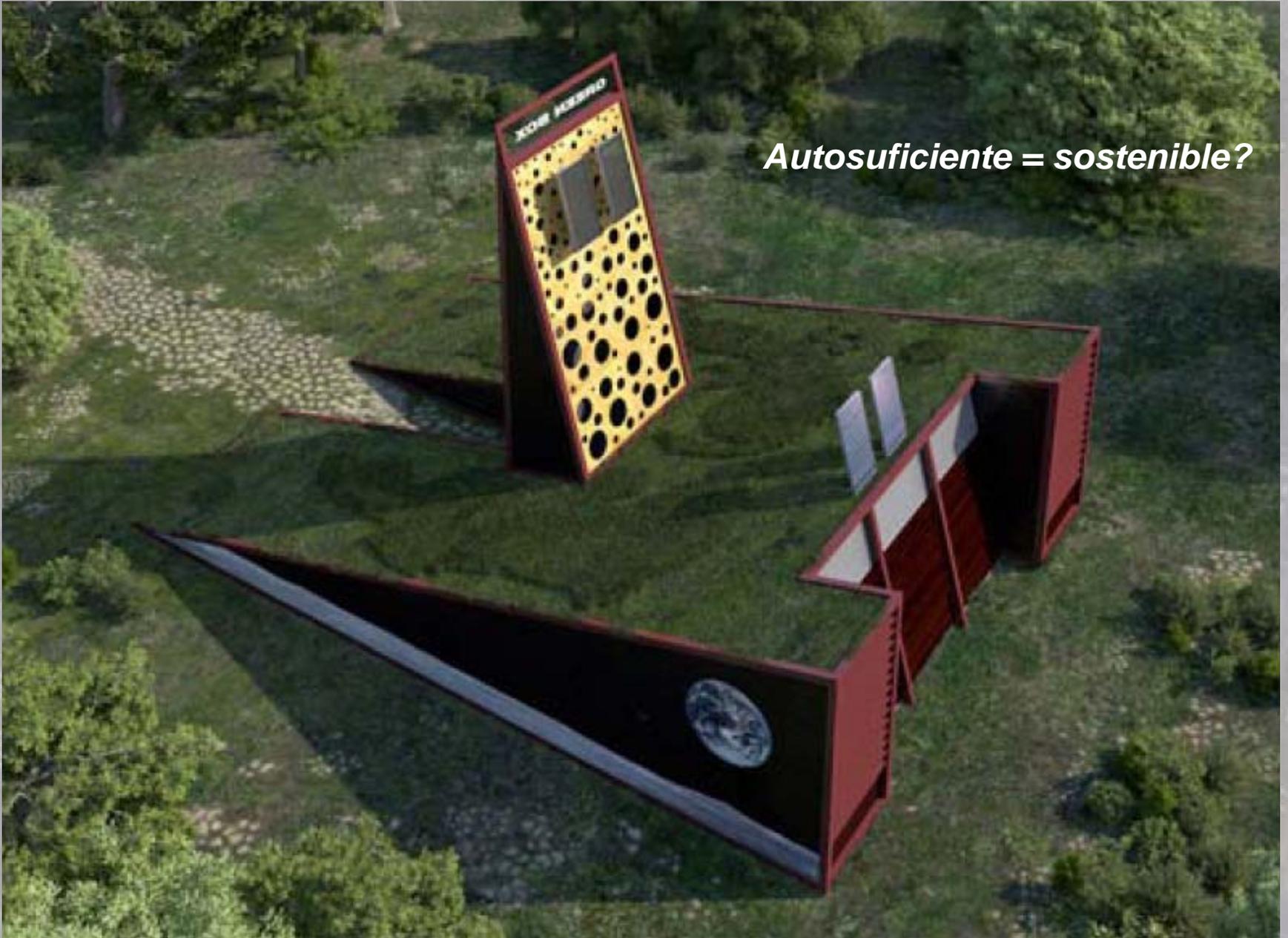
Ventanas con insolación excesiva sobre fachadas SW-SE

Radiación incidente sobre las ventanas



Edificio Layetana, l'Hospitalet de Llobregat (RCR & ERF, 2010)

Autosuficiente = sostenible?



Proyecto Green Box (*Luis de Garrido, 2009*)



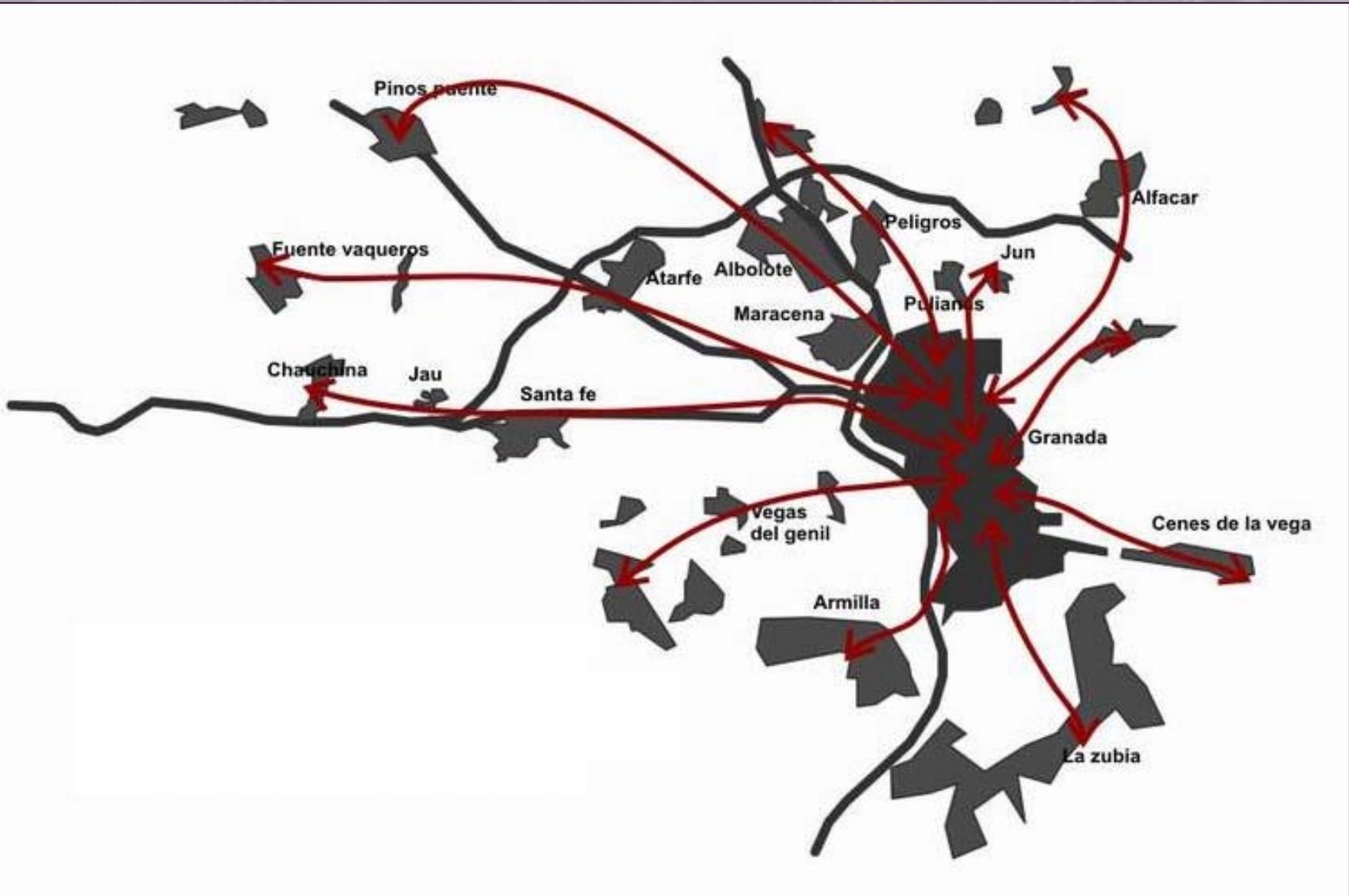
Proyecto Gwanggyo Power City, para Daewoo (MVRDV, 2009)



Proyecto Gwanggyo Power City, para Daewoo (MVRDV, 2009)

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El transporte horizontal







Dubai
1980



Dubai
2000



1 km



Dubai
2010



2000



2010



El 40% de la energía primaria se consume en transporte





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Epílogo

¿Qué modelo para qué cambio?





*“Los días de la energía barata
se acabaron para Europa”*

**Una política energética para Europa
(Berlín, 10 de Enero de 2007)**

José Manuel Durão Barroso
Presidente de la Comisión Europea



“Pueden quienes creen que pueden”
(Possunt quia posse videntur)

Publio Virgilio Marón (70-19 aC.)



ERF

Estudi Ramon Folch

www.erf.cat

www.sostenible.cat