Autorità per l'energia elettrica il gas
e il sistema idrico

NUTRIRE IL FUTURO

Energia: quali scenari per il futuro

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Siracusa, 25 luglio 2015

Indice

1. Geopolitica dell'energia
2. Rivoluzione tecnologica, fonti rinnovabili e politiche pubbliche: l'impatto per i cittadini e per l'industria

1. Geopolitica dell'energia

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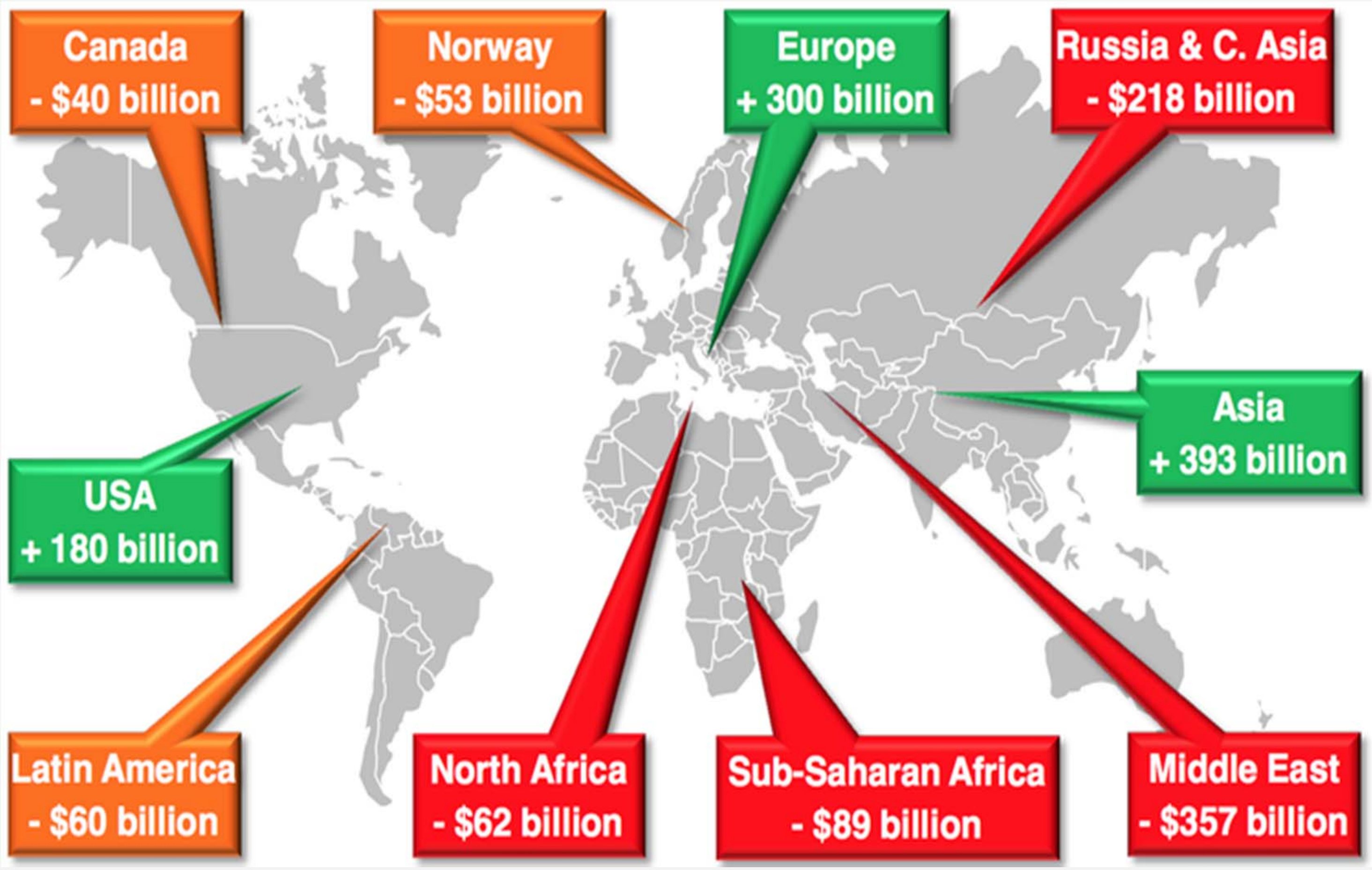
Le conseguenze del crollo del prezzo del petrolio



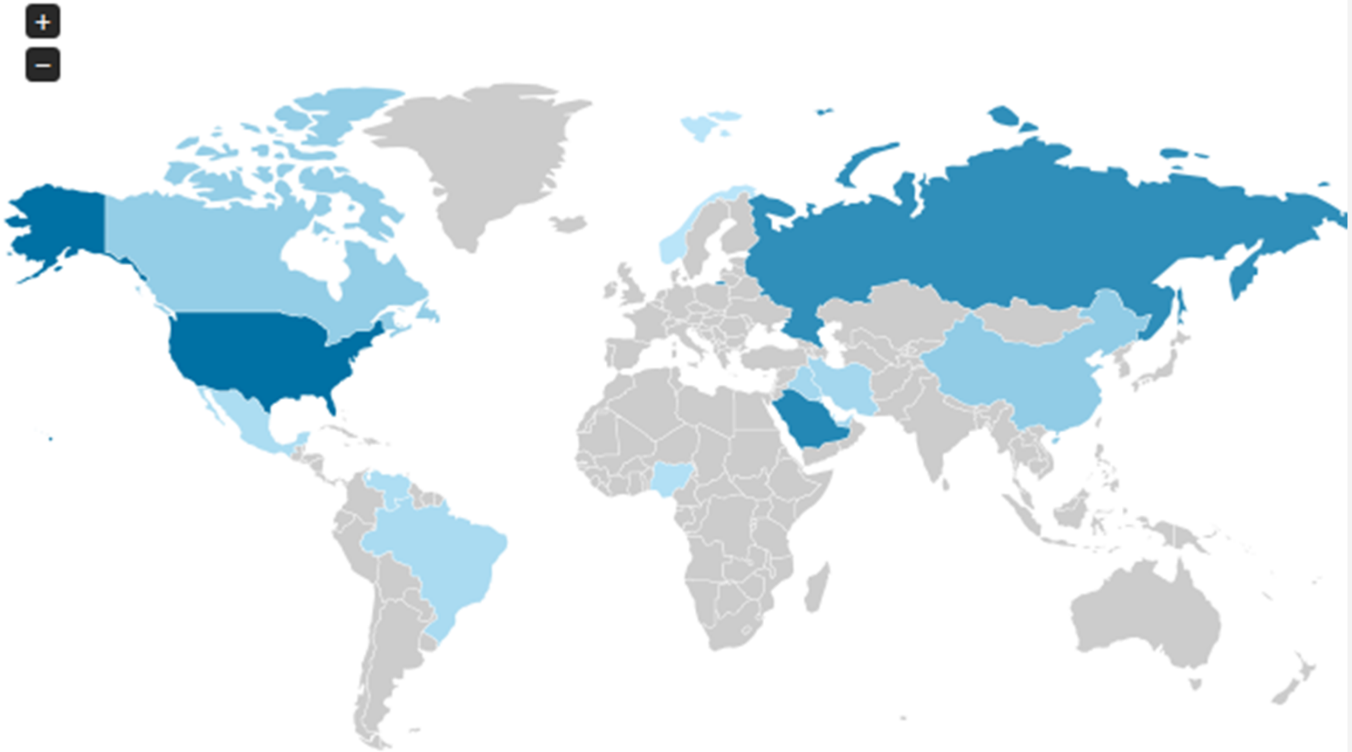
2015: il prezzo del petrolio crolla da 112$ a 55$/barile con un conseguente trasferimento di reddito tra regioni di 900 Mld$

Produzione di petrolio nel mondo

Total Petroleum and Other Liquids Production - 2014 ›

Thousand Barrels Per Day

1. United States
2. Saudi Arabia
3. Russia
4. China
5. Canada
6. United Arab Emirates
7. Iran
8. Iraq
9. Brazil
10. Mexico
11. Kuwait
12. Venezuela
13. Nigeria
14. Qatar
15. Norway



Fonte: EIA 2015
http://www.eia.gov/beta/international/

Petroleum and other liquids: All petroleum including crude oil and products of petroleum refining, biofuels and liquids derived from other hydrocarbon sources (including coal to liquids and gas to liquids).

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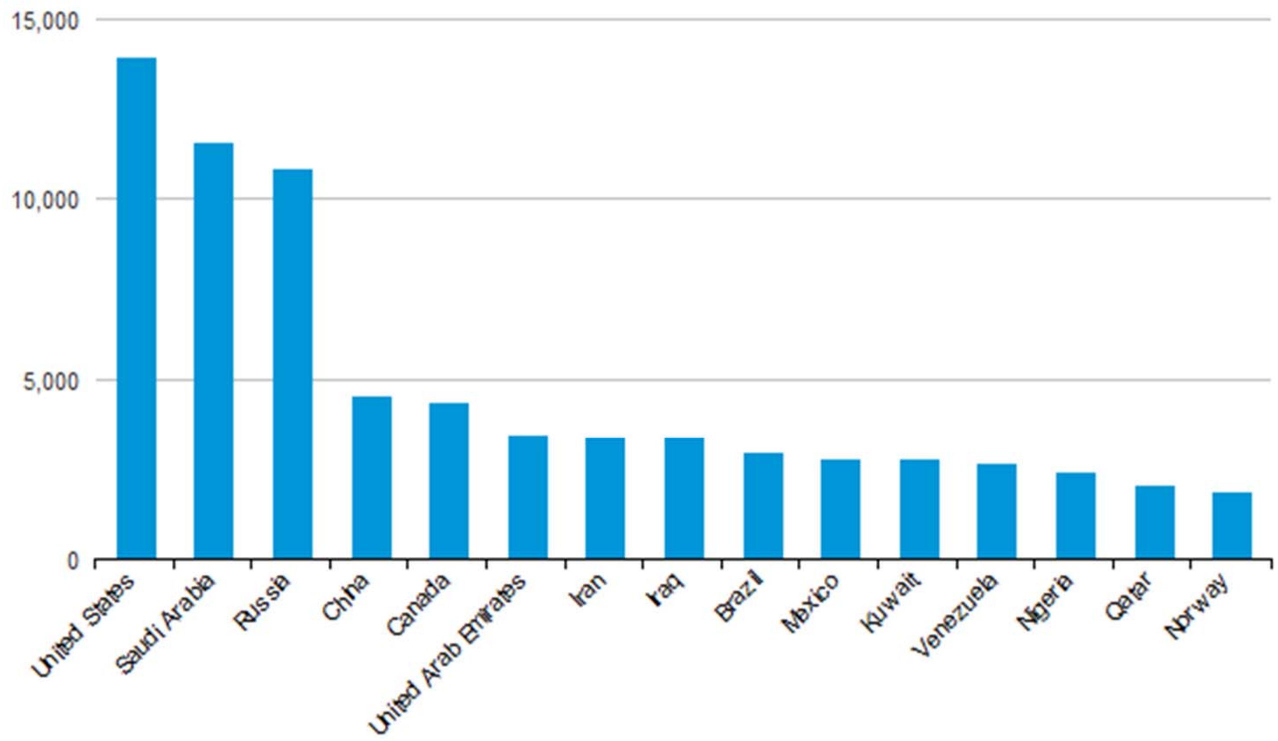

Fonte: EIA 2015
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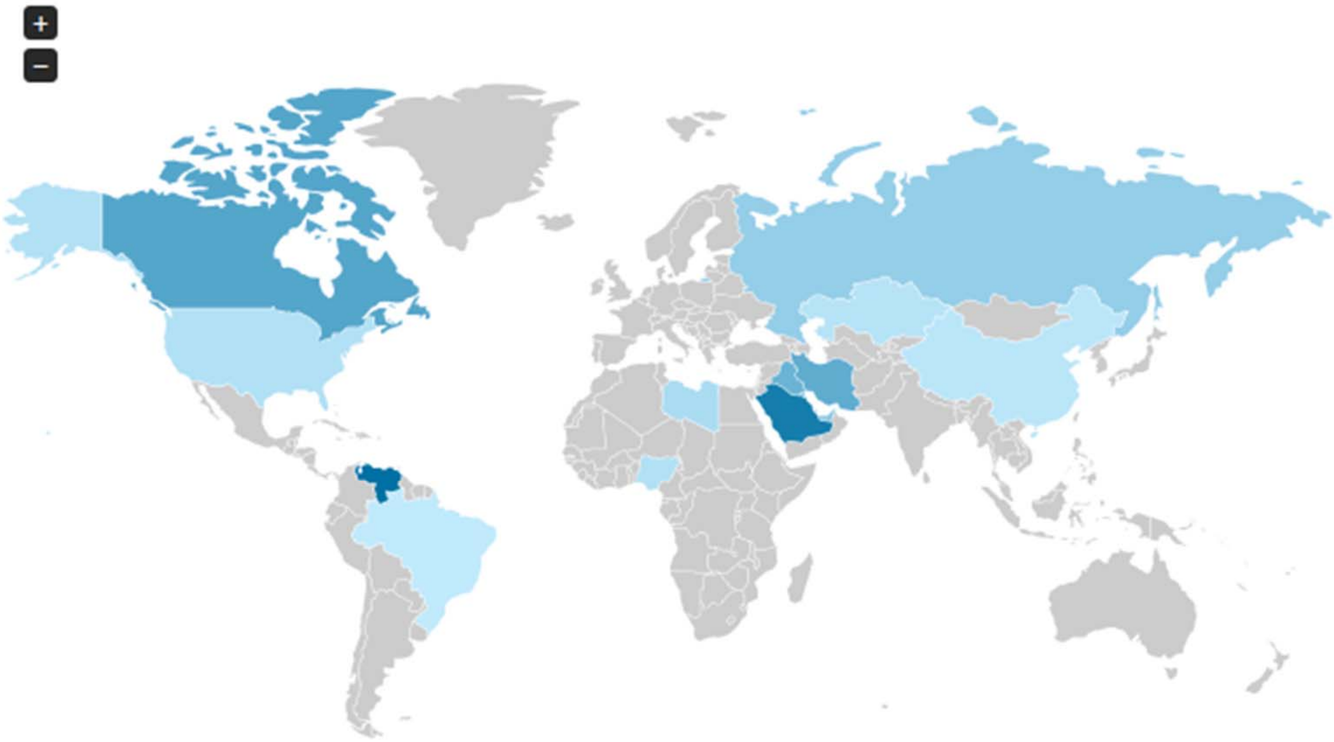
Riserve di petrolio nel mondo

Crude Oil Proved Reserves - 2014 ›

Billion Barrels

1. Venezuela
2. Saudi Arabia
3. Canada
4. Iran
5. Iraq
6. Kuwait
7. United Arab Emirates
8. Russia
9. Libya
10. Nigeria
11. United States
12. Kazakhstan
13. Qatar
14. China
15. Brazil



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Crude Oil Proved Reserves - 2014 ›

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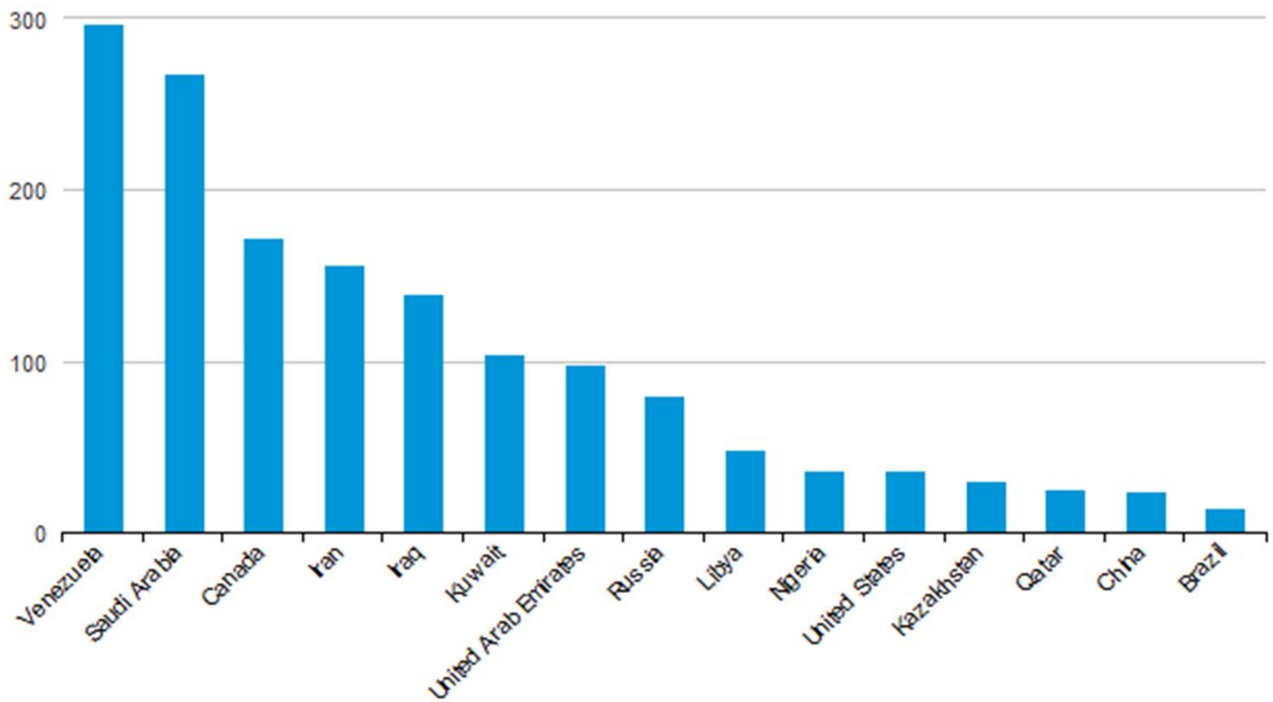


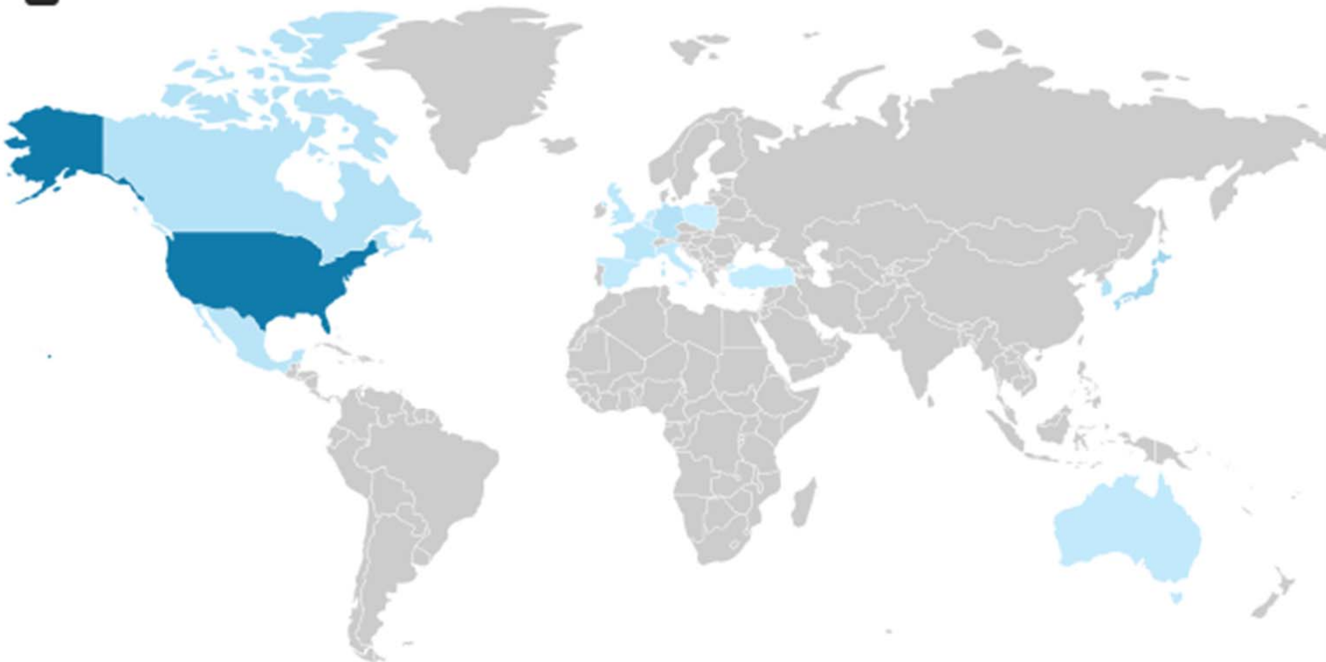
Fonte: EIA 2015
http://www.eia.gov/beta/international/

Consumo di petrolio nel mondo

Total Petroleum Consumption - 2014 ›

Thousand Barrels Per Day

1. United States
2. Japan
3. Canada
4. Germany
5. Korea, South
6. Mexico
7. France
8. United Kingdom
9. Italy
10. Spain
11. Australia
12. Netherlands
13. Turkey
14. Belgium
15. Poland



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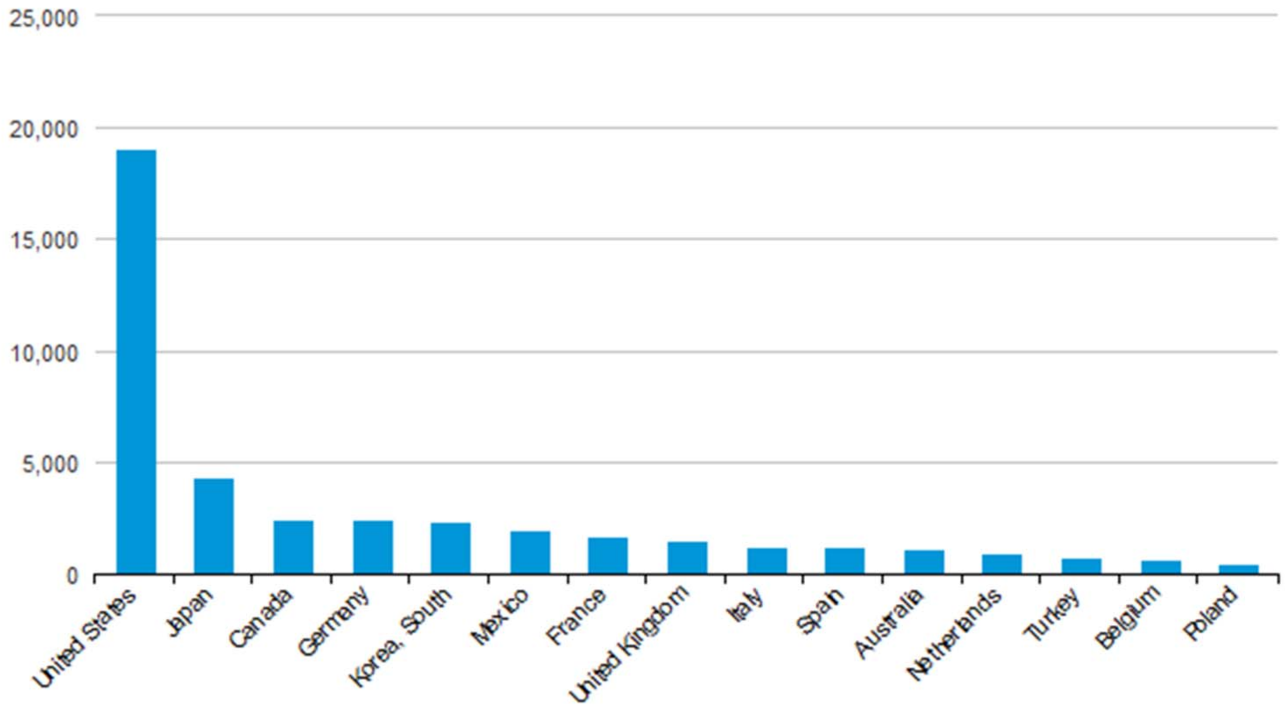

Fonte: EIA 2015
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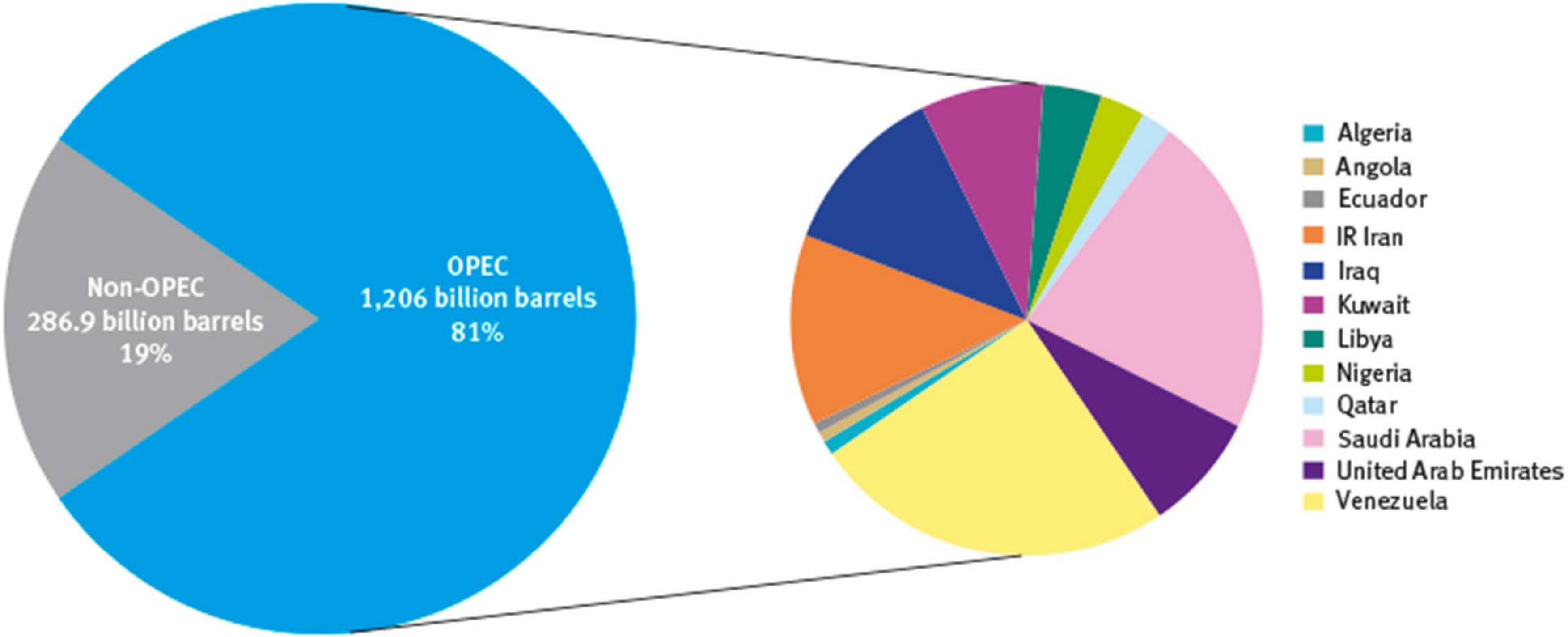
OPEC share of world crude oil reserves, 2014



OPEC proven crude oil reserves, at end of 2014 ***(billion barrels, OPEC share)***

Venezuela	299.95	24.9%	Iraq	143.07	11.9%	Libya	48.36	4.0%	Algeria	12.20	1.0%
Saudi Arabia	266.58	22.1%	Kuwait	101.50	8.4%	Nigeria	37.07	3.1%	Angola	8.42	0.7%
IR Iran	157.53	13.1%	UAE	97.80	8.1%	Qatar	25.24	2.1%	Ecuador	8.27	0.7%

Source: OPEC Annual Statistical Bulletin 2015.

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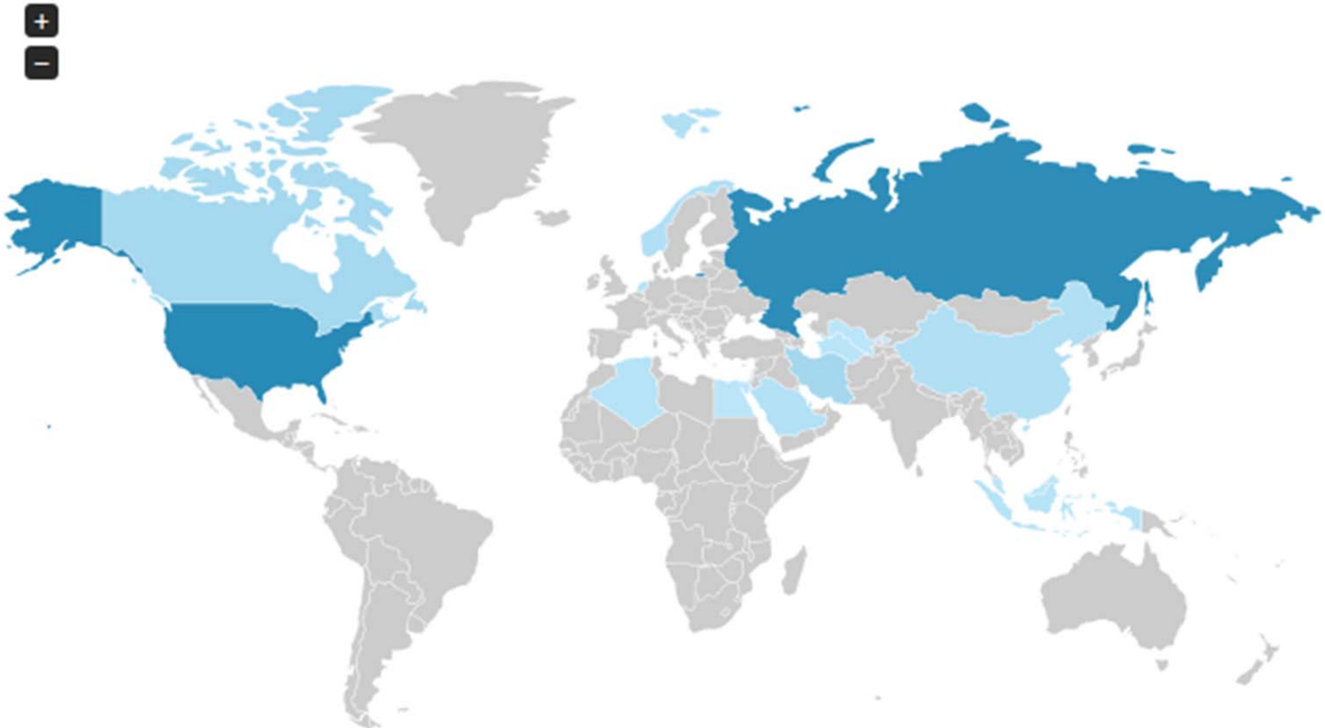
Produzione di gas nel mondo

Dry Natural Gas Production - 2011* › (*most recent year with sufficient data for ranking)

Billion Cubic Feet

1. United States
2. Russia
3. Iran
4. Canada
5. Qatar
6. China
7. Norway
8. Saudi Arabia
9. Algeria
10. Netherlands
11. Indonesia
12. Turkmenistan
13. Uzbekistan
14. Malaysia
15. Egypt



Fonte: EIA 2015

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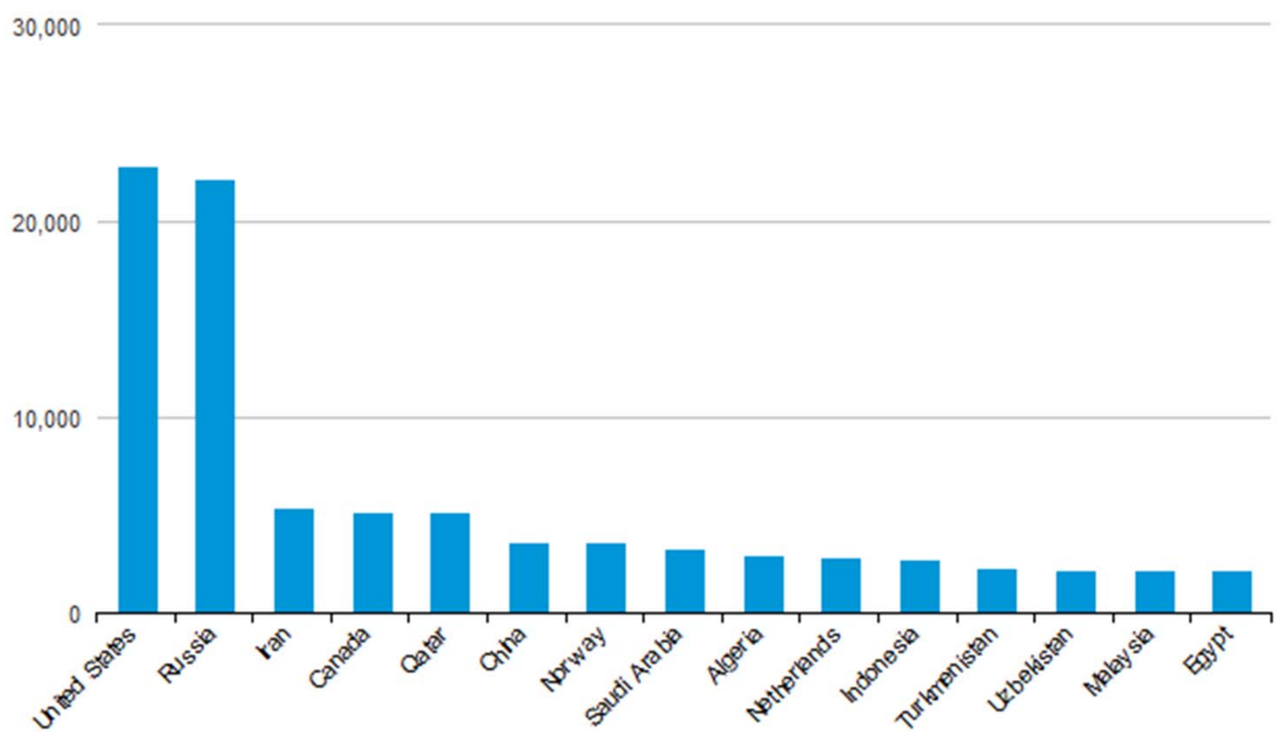
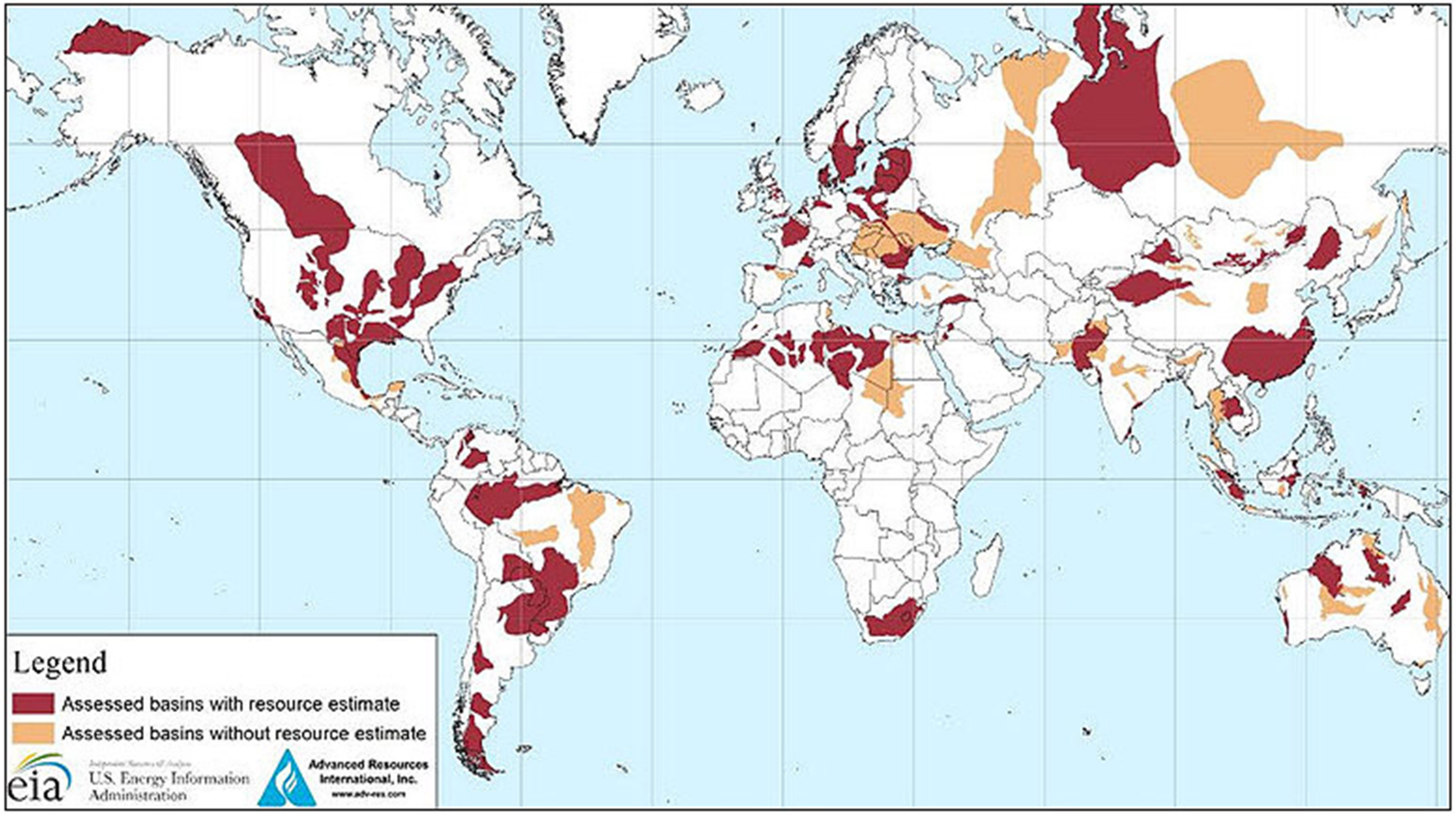


Fonte: EIA 2015
http://www.eia.gov/beta/international/

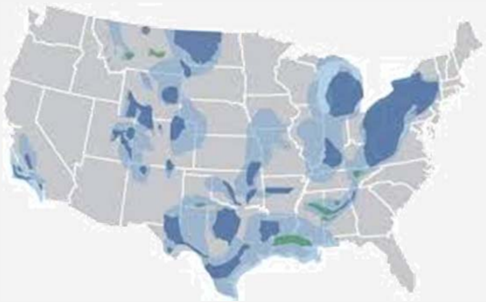
Riserve di shale gas nel mondo

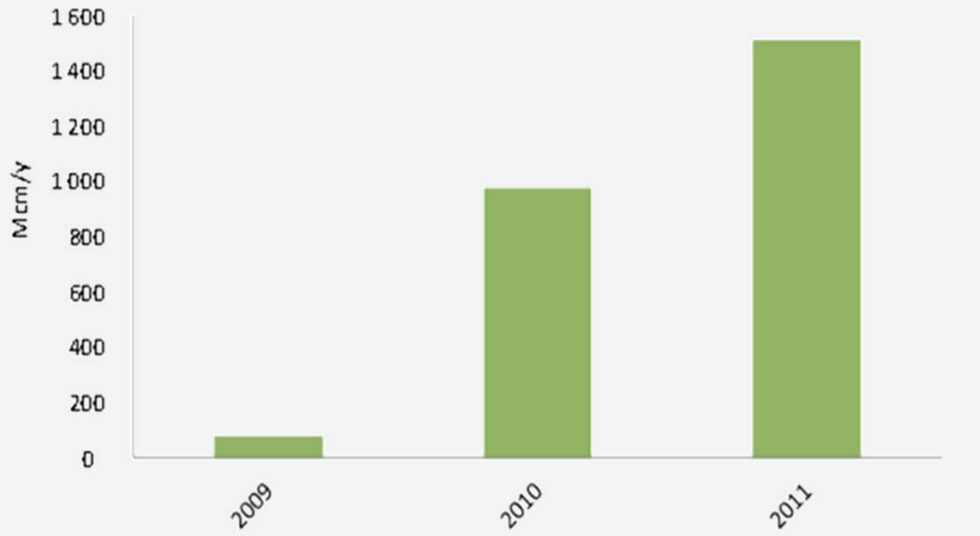
Location of World Shale Reserves



2015 *Source: Energy Information Agency*

Esportazioni di GNL dagli USA 2009-11





- **Applications recieved by the US DoE to export LNG, (May 2012)**

Project	Capacity (bcm)	FTA Applications	Non FTA Applications	Online date
Sabine Pass	22.7	Approved		2015
Freeport LNG	28.9	Approved	Under DOE Review	2015
Lake Charles	20.7	Approved	Under DOE Review	2018
Carib Energy	0.3 (FTA)/0.1 (Non-FTA)	Approved	Under DOE Review	Na
Cove Point LNG	10.3	Approved	Under DOE Review	2016
Jordan Cove Energy	12.4	Approved	Under DOE Review	2017
Cameron LNG	17.6	Approved	Under DOE Review	Na
Gulf Coast LNG	28.9	Under DOE Review		Na
Total	141.9			

Fonte: IEA and USDOE

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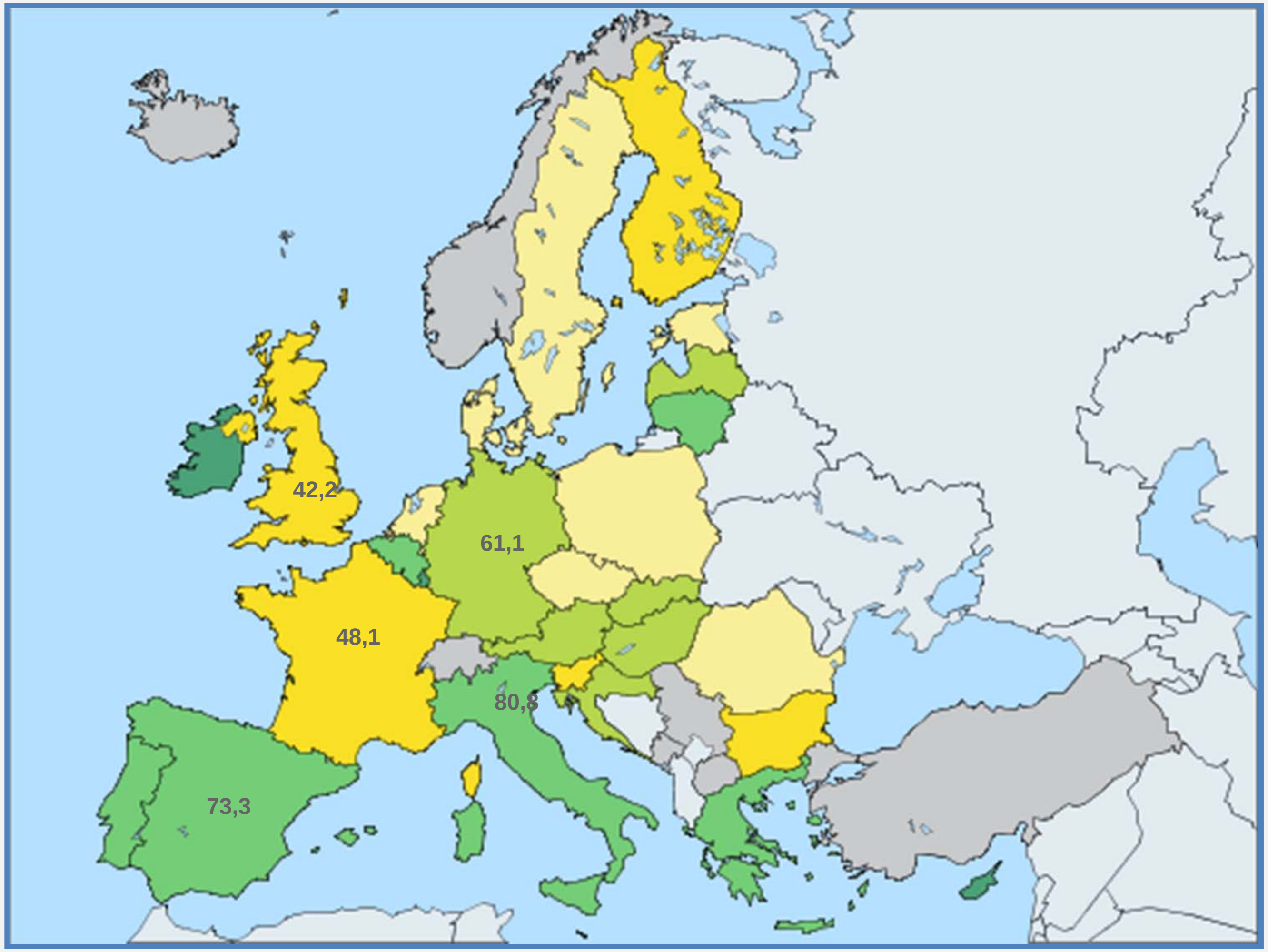
Forte dipendenza energetica dell'Unione Europea



Totale Unione Europea 28 Paesi
53,3%

Fonte: Eurostat (dati 2012) http://ec.europa.eu/eurostat/web/energy/data/main-tables

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The Energy Union Package, European Commission Feb. 2015

Where we want to go:

Secure, sustainable, competitive, affordable energy for every European

What this means:

1. Energy security, solidarity and trust
2. A fully integrated internal EU-wide energy market
3. Energy efficiency as an energy source in its own right
4. Transition to a low-carbon society
5. Research, innovation and competiveness

How we want to reach it:

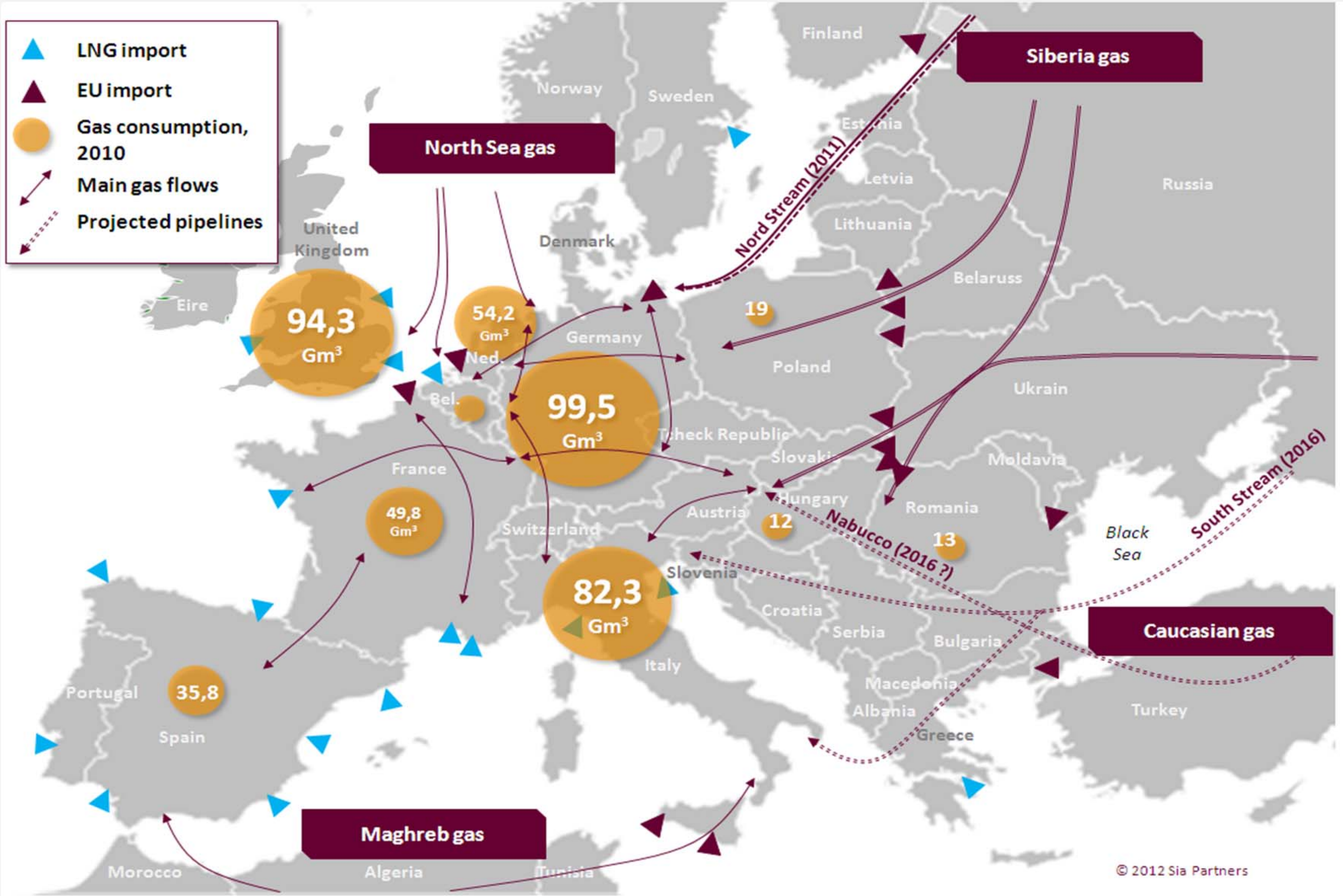
5 GUIDING DIMENSIONS

15 CONCRETE ACTIONS

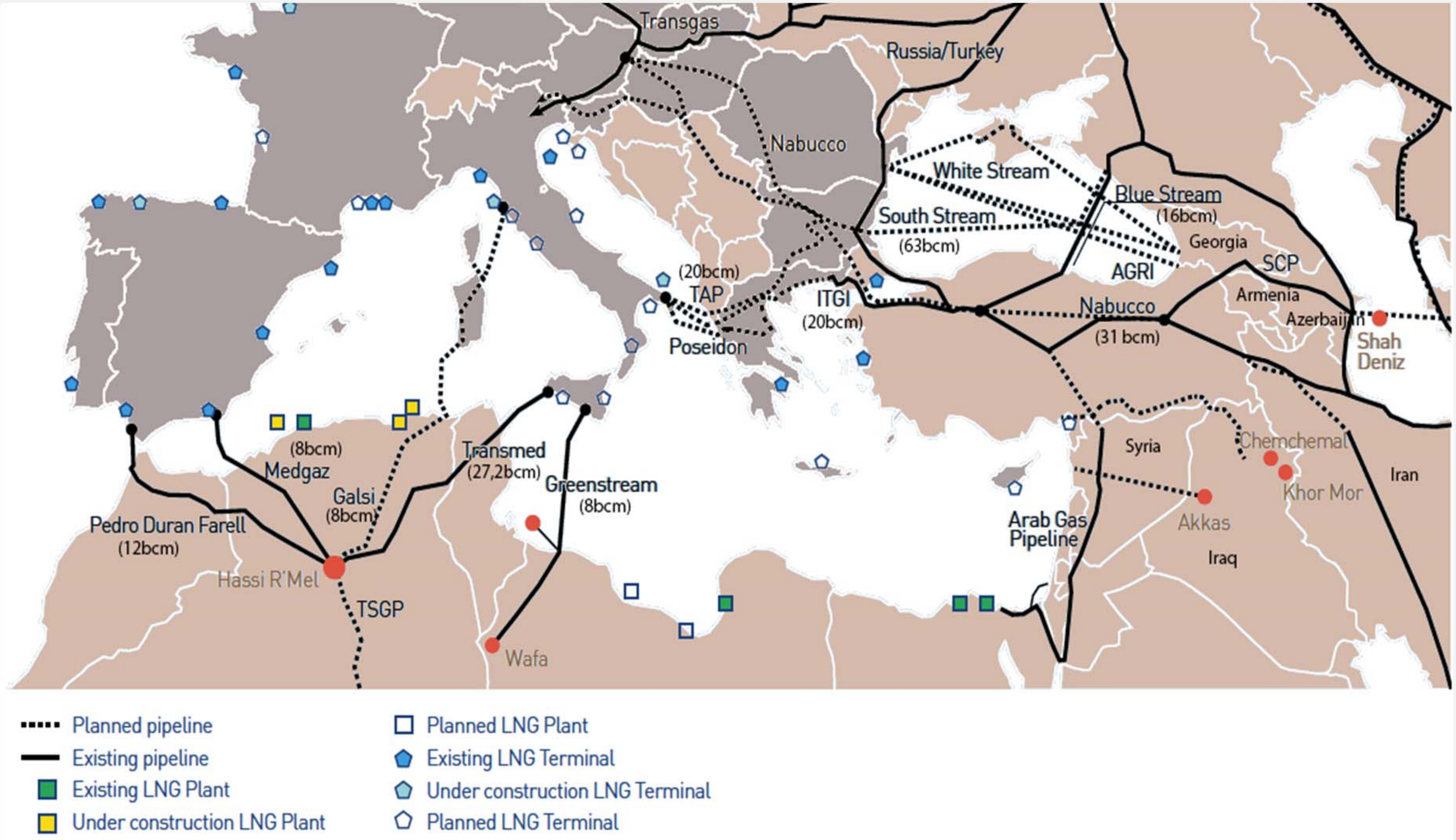
43 INITIATIVES

COM 303030

Flussi e consumi di gas in Europa



Infrastrutture per l'esportazione e l'importazione di gas nel bacino mediterraneo



Source: OME.

Infrastutture per il gas dalla Russia

Source: J Stern, Chapter 3, in J. Henderson and S. Pirani (eds.), The Russian Gas Matrix (forthcoming 2014)

2. Rivoluzione tecnologica, fonti rinnovabili e politiche pubbliche: l'impatto per i cittadini e per l'industria

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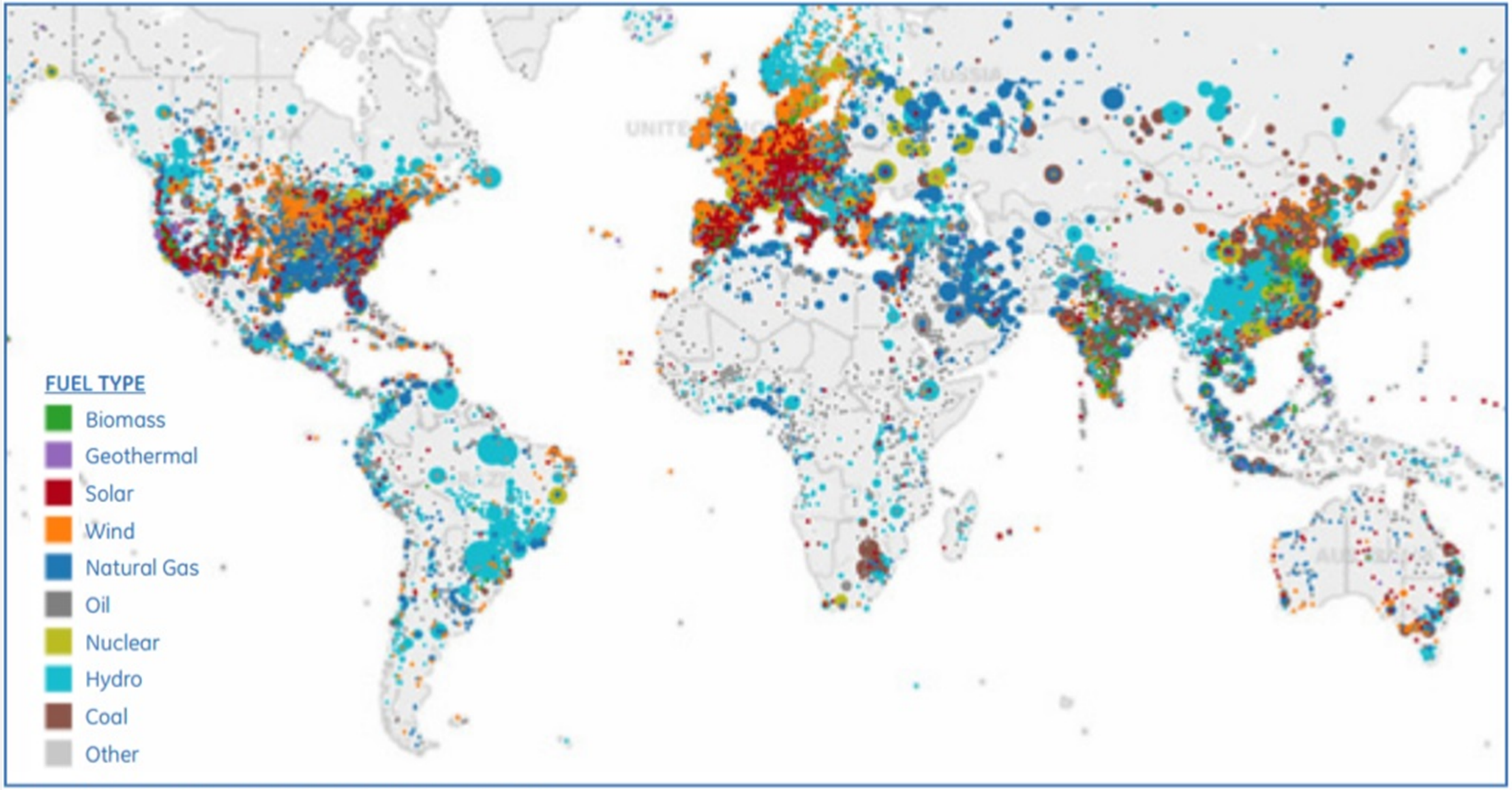
Le fonti rinnovabili nel mondo

Figure 7. Global Power Plant Fleet by Technology



Source: Power plant data source Platts UDI Database, June 2012
Note: Circle size represents installed capacity (MW).

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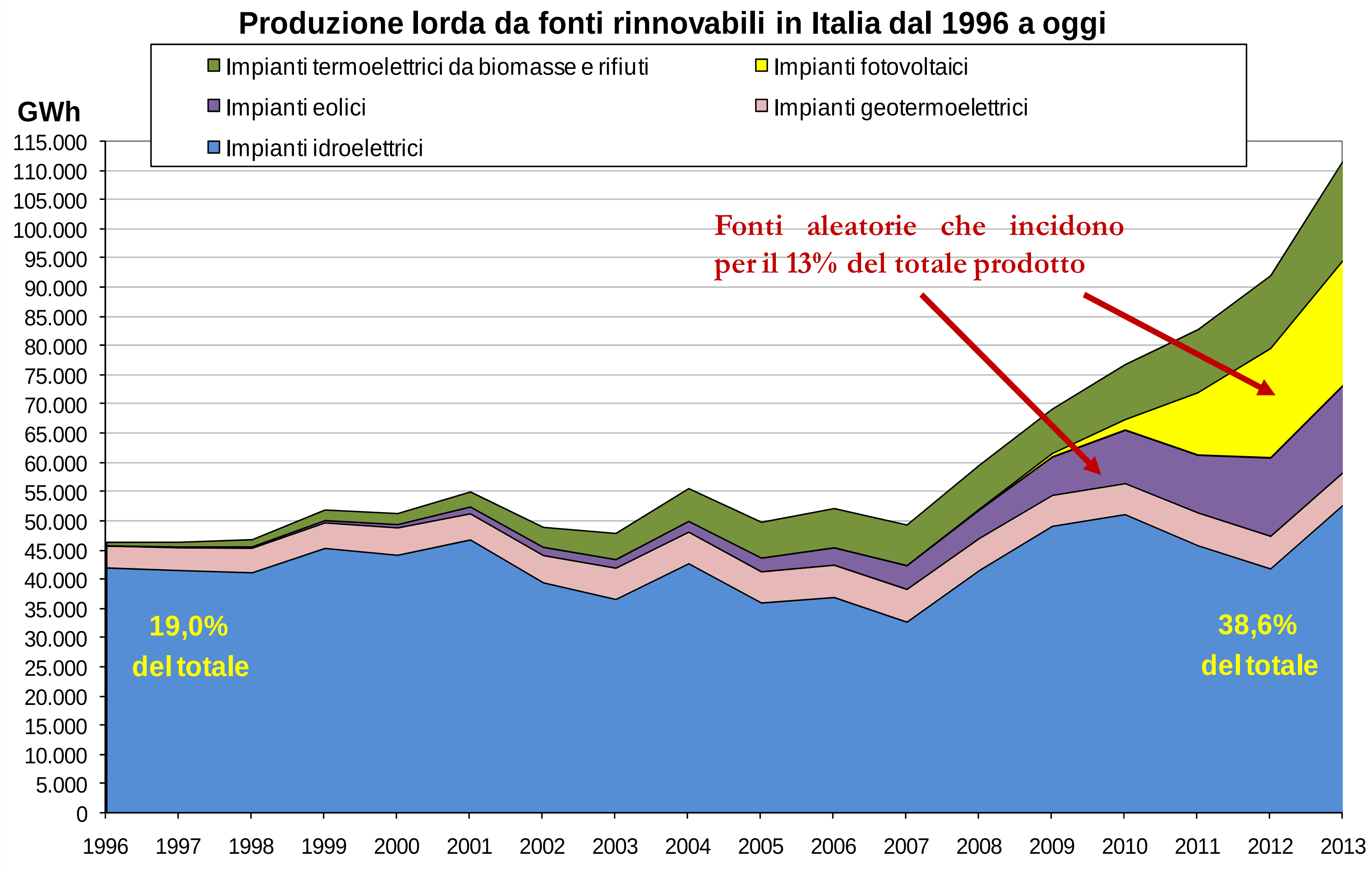
L'aumento delle fonti rinnovabili in Italia



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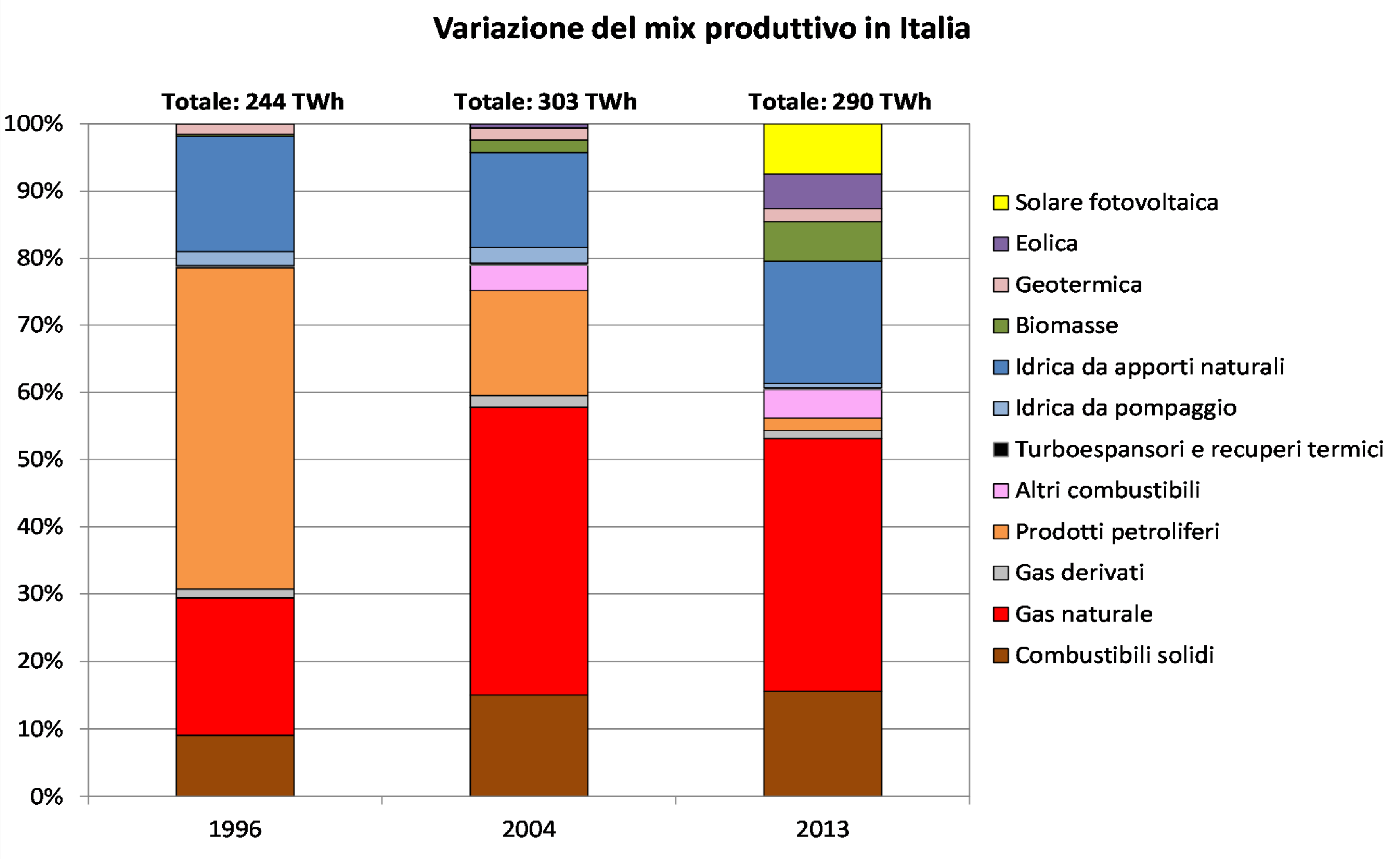
Le fonti energetiche in Italia



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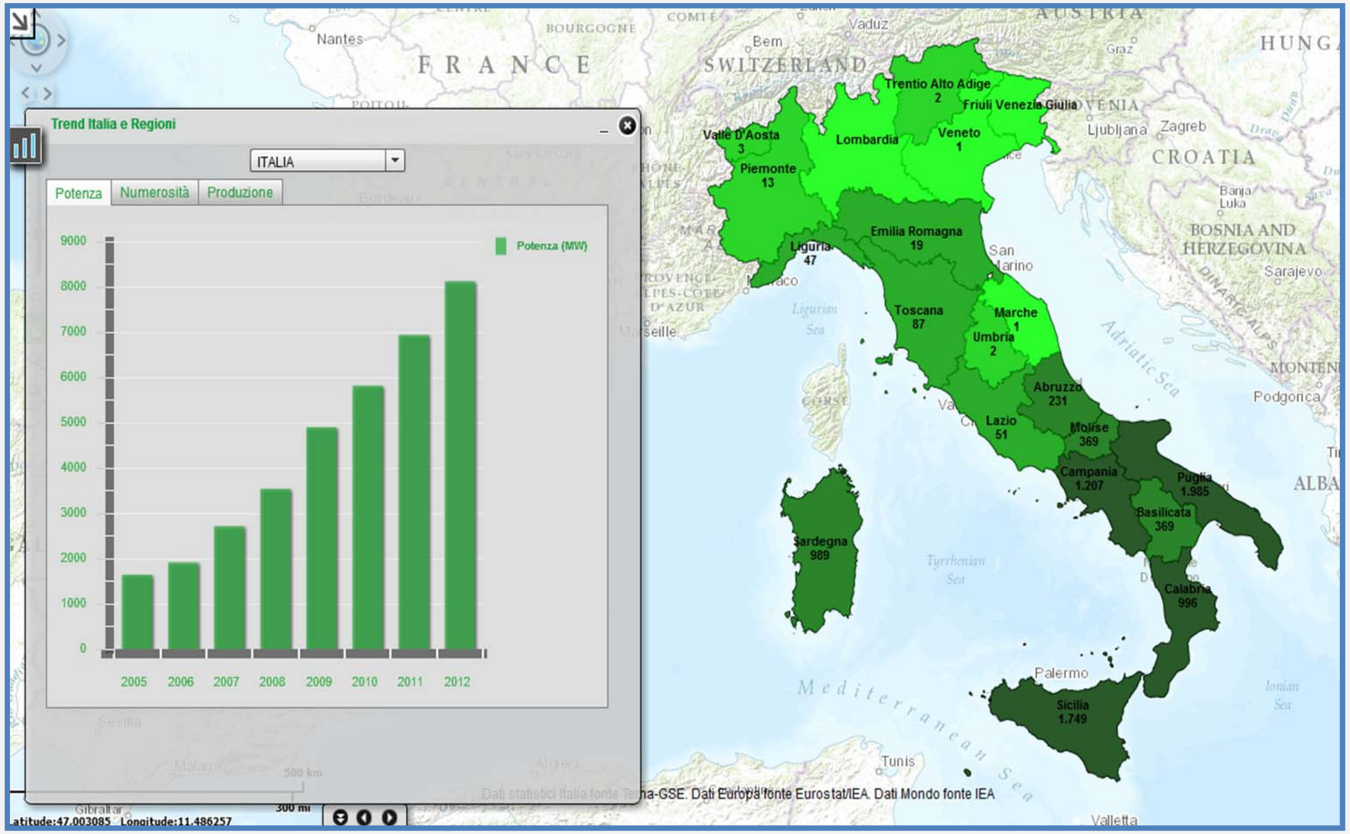
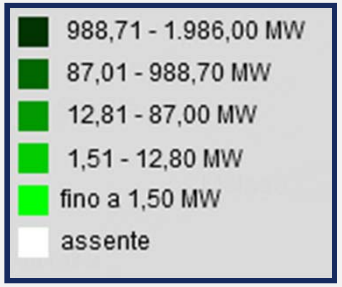
Diffusione di nuovi impianti eolici piccoli e grandi

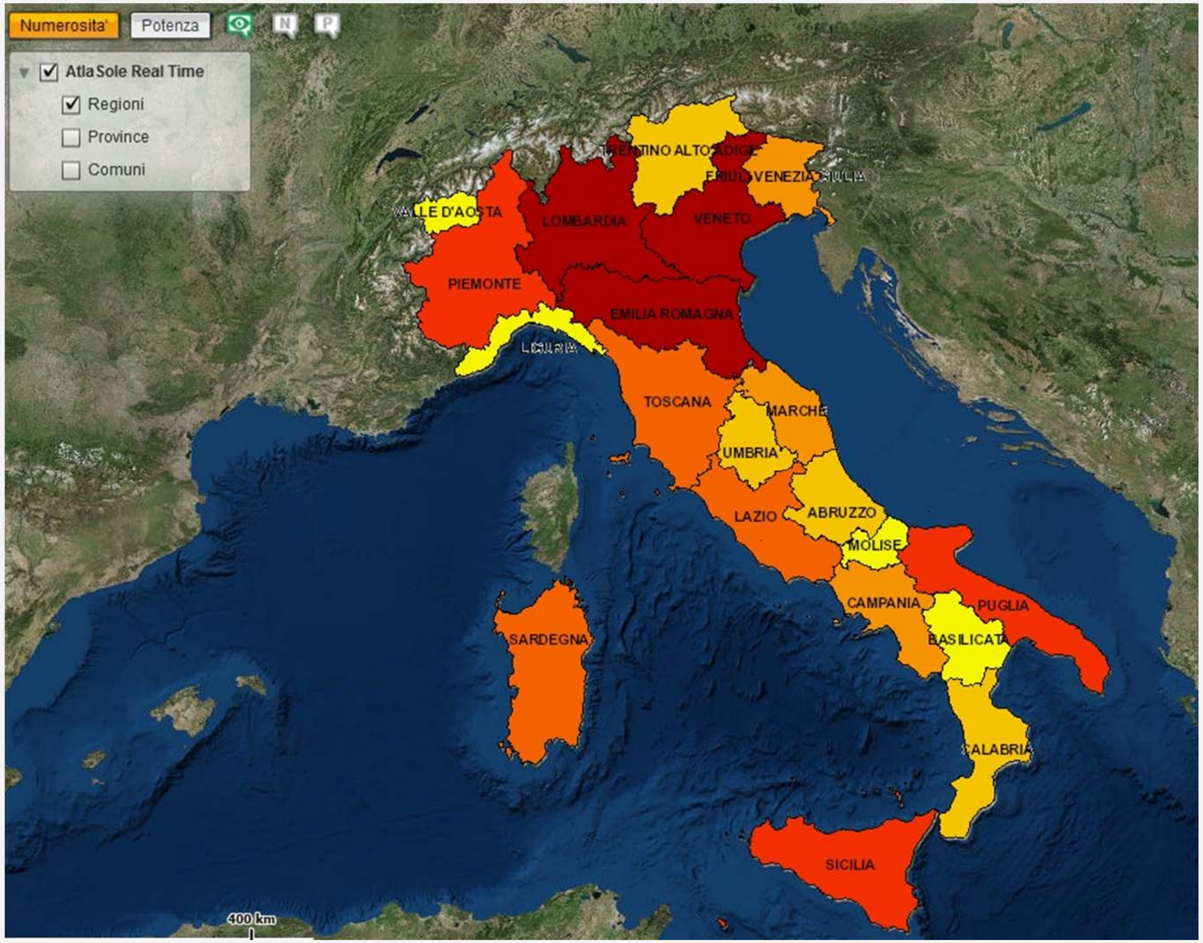




Dati GSE
http://atlavento.gse.it/atlavento/

In 5 anni il numero di **impianti eolici** in Italia è passato da 203 nel 2007 a 1054 nel 2012; parallelamente la potenza installata è passata da 2714 MW a 8119 (+ 200%)

Diffusione degli impianti fotovoltaici



Riepilogo Impianti

ITALIA	Numero	Potenza [MW]
Tutti gli impianti	550.534	17.698
Fino a 3 kW	176.555	490
Da 3 a 20 kW	313.003	2.424
Da 20 a 200 kW	48.724	3.808
Da 200 a 1000 kW	11.122	7.274
Oltre 1000 kW	1.130	3.702

Gli **impianti fotovoltaici** hanno superato le 550mila unità, con una potenza installata di oltre 17.600MW (fine 2011 oltre 400mila unità con potenza installata di circa 12.500MW)

AtlaSole Real Time

Regioni

- 1.647 - 6.575 N
- 6.576 - 19.410 N
- 19.411 - 24.211 N
- 24.212 - 31.986 N
- 31.987 - 38.532 N
- 38.533 - 76.828 N

Dati GSE 23 luglio 2015
http://atlasole.gse.it/atlasole/