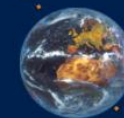
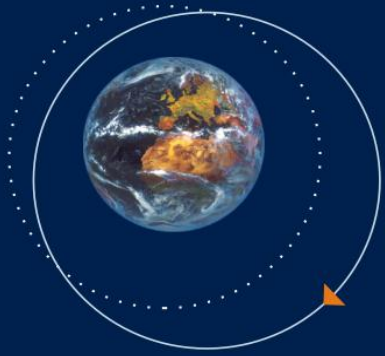


# Global Issues and the Middle East

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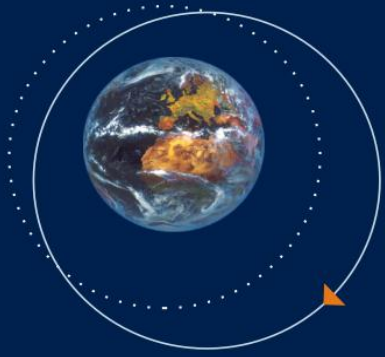
## Outline

Water: the most critical problem

Energy: major disruptive trends

Security: the requirements for a regional peace agreement





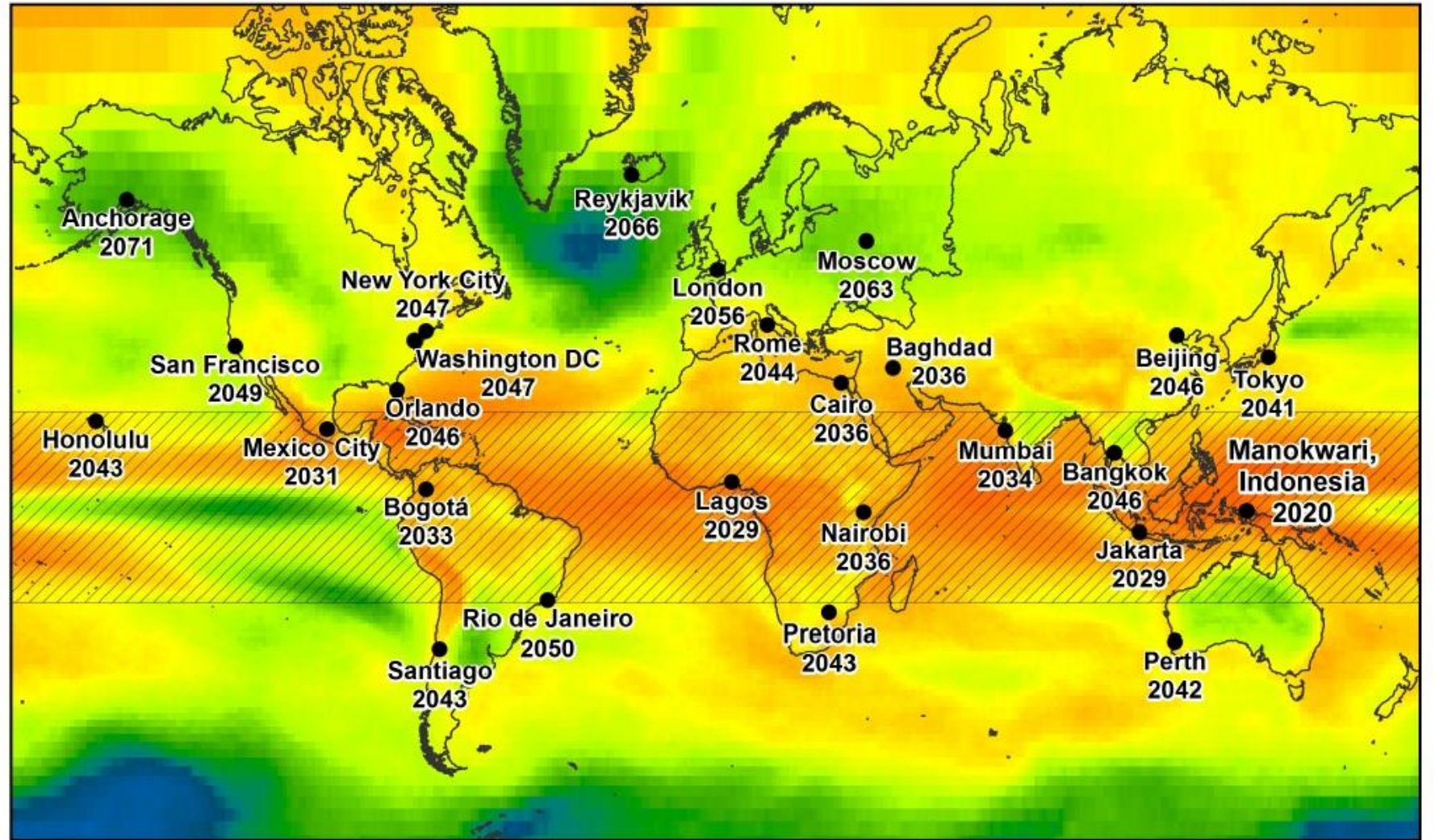
# Water: the most critical problem

*Without water there can be no life*



# Year of Climate Departure for World Cities

Results show multi-model averages under RCP8.5 (Mora et al. 2013)



The global mean year of climate departure is 2047. The mean for the tropics (shown in the hatched area) is 2038, compared to 2053 for all other latitudes.

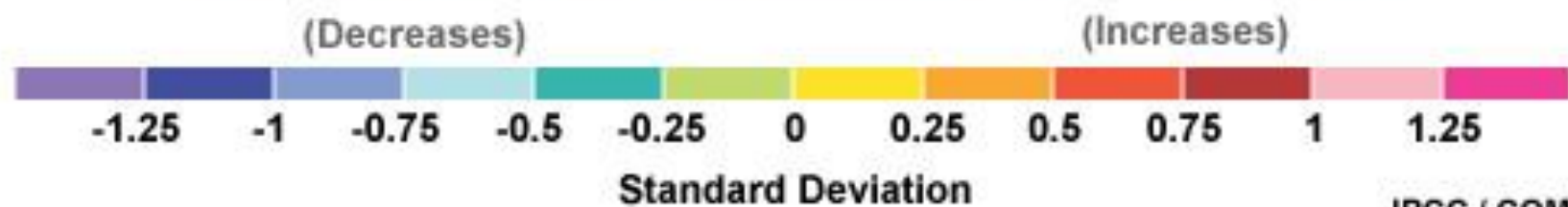
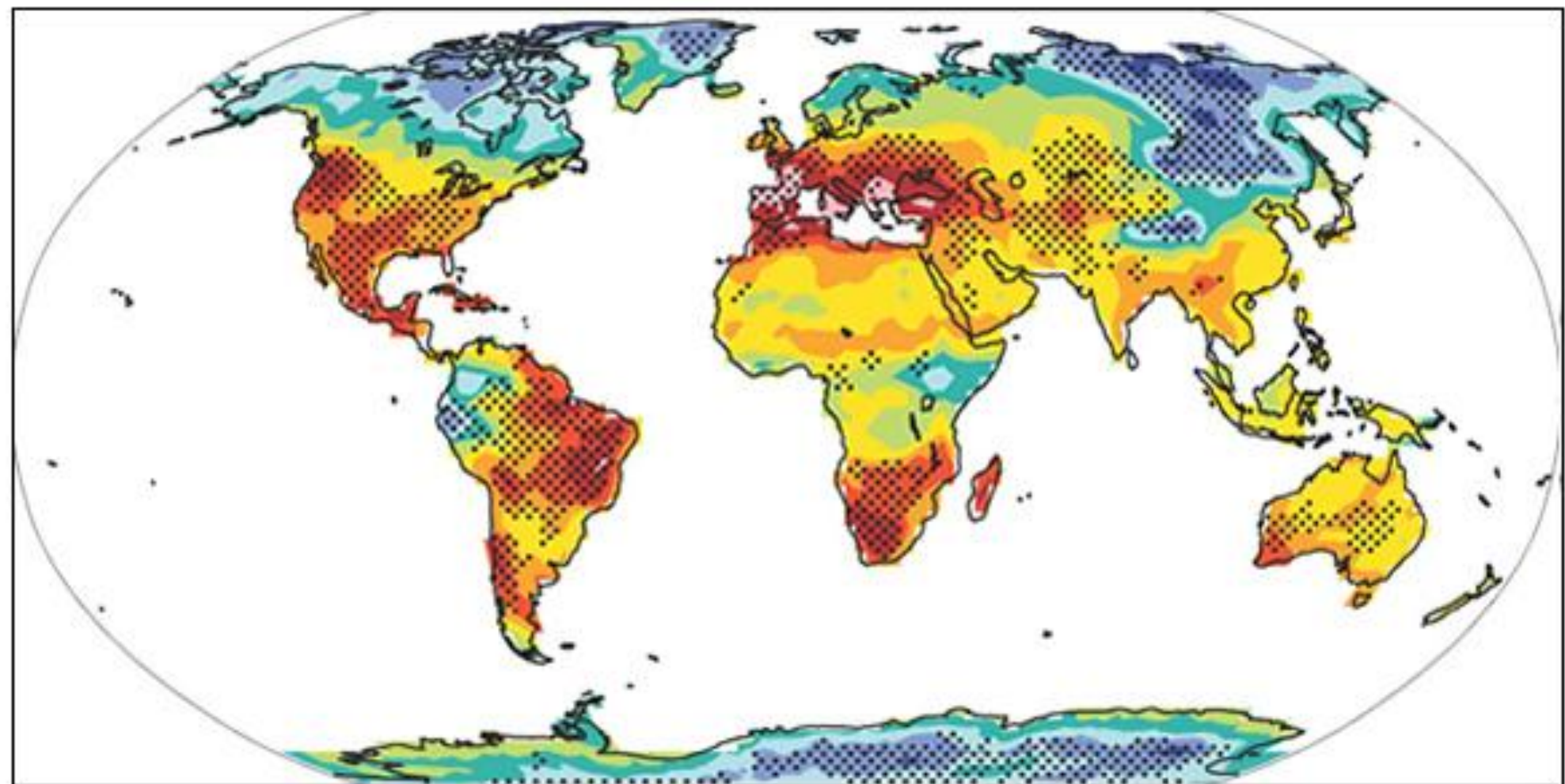
0 2,000 4,000 8,000 12,000 16,000 Kilometers

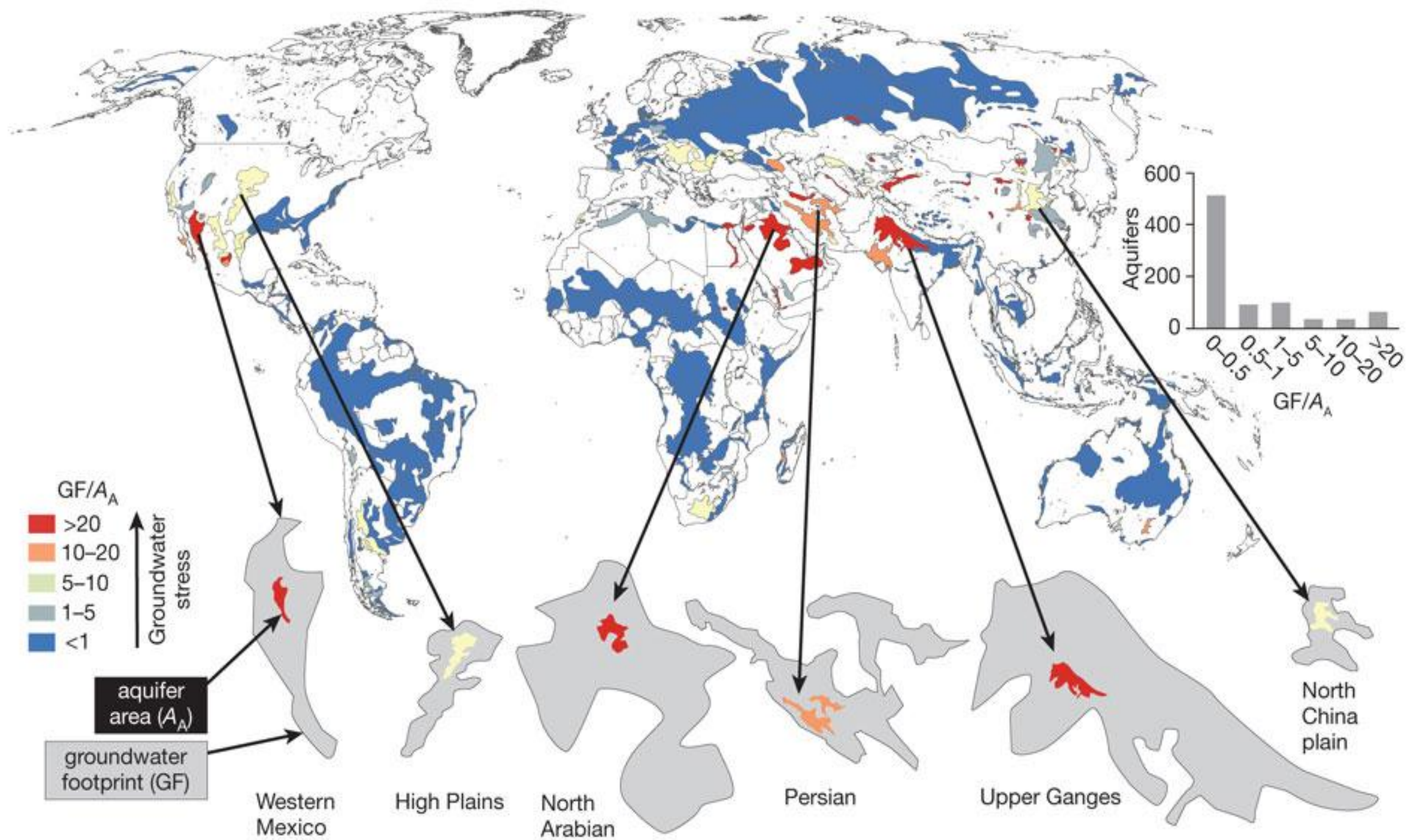


Year of climate departure



**Multi-model Simulation of Changes in Dry Days**  
Years 2080-2099 Minus Years 1980-1999 (middle emissions scenario)







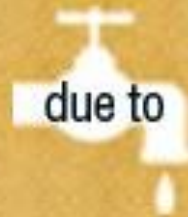
## IRAN

Daily water  
consumption



**66 GALLONS**

24th most water-  
stressed country



due to

lack of fresh water  
and overconsumption



Iran's Ministry of Energy  
2014



Far beyond the suggested limit of 40%

Shrunk to **5%**  
of its earlier volume  
in just 20 years

Once - largest river  
Now - mostly dry



“The Iranian plateau is becoming uninhabitable ... groundwater has decreased and a negative water balance is widespread.... If this situation is not reformed, in 30 years Iran will be a ghost town.”

Issa Kalantari, head of agricultural research for the Expediency Council's Center of Strategic Research, July 9, 2013







“The water situation of 14 cities in the country have alarming conditions.”

“Climate change is a serious threat for life on Earth.”

Masoumeh Ebtekar, head of Iran's Environmental Protection Organization, Feb. 18, 2015



## RUNNING LOW

 Countries overpumping aquifers in 2012





Climate change and water shortages threaten the stability, security and long-term survival of most countries in the Middle East.



## To avoid disaster water resources will have to be used sustainably

- Sustainable water budgets will have to be established and enforced to preserve supplies and protect the environment
- International best practices can be used to maximize available supplies (e.g. recycling water; precision irrigation)

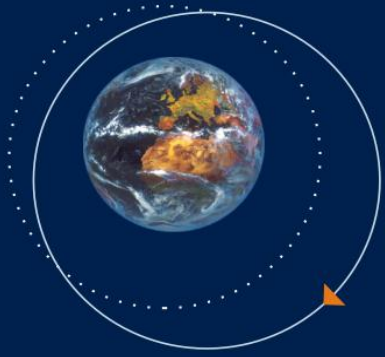


However, conservation will not be enough.

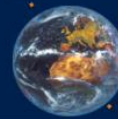
Global climate change must be stopped or it will not be possible to live in most of the Middle East.



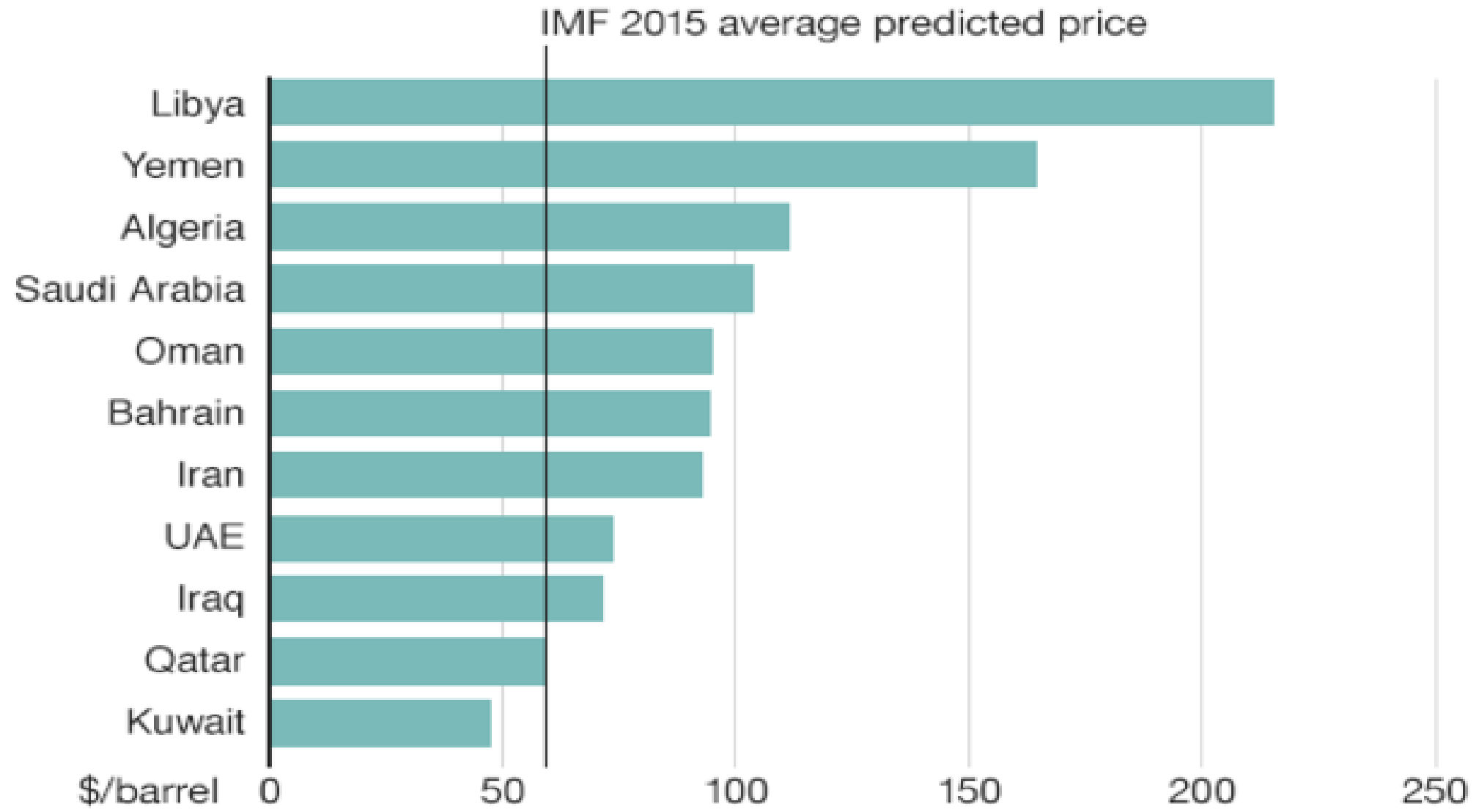




## Energy: major disruptive trends



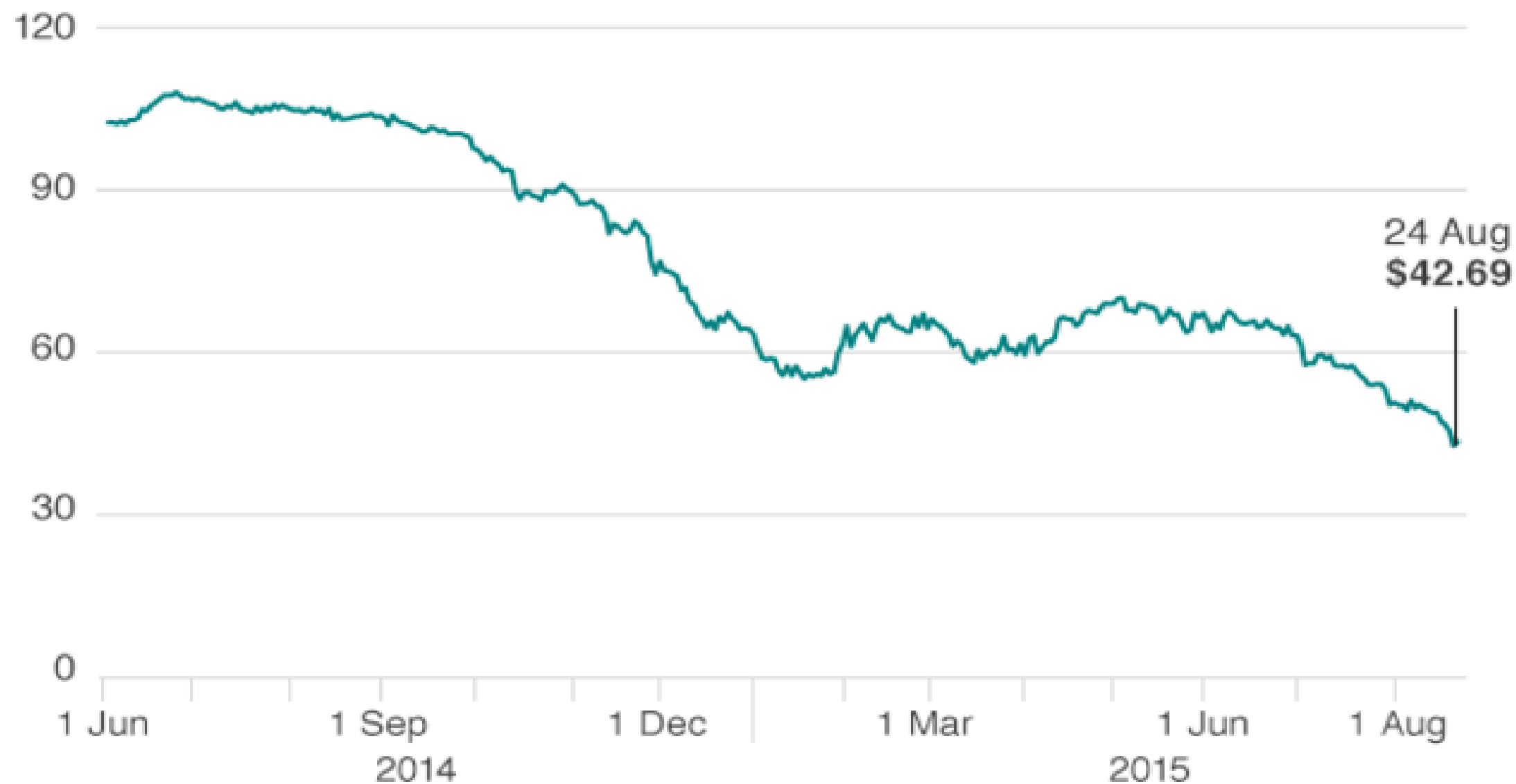
## Breakeven oil prices



Source: IMF 2015 projections

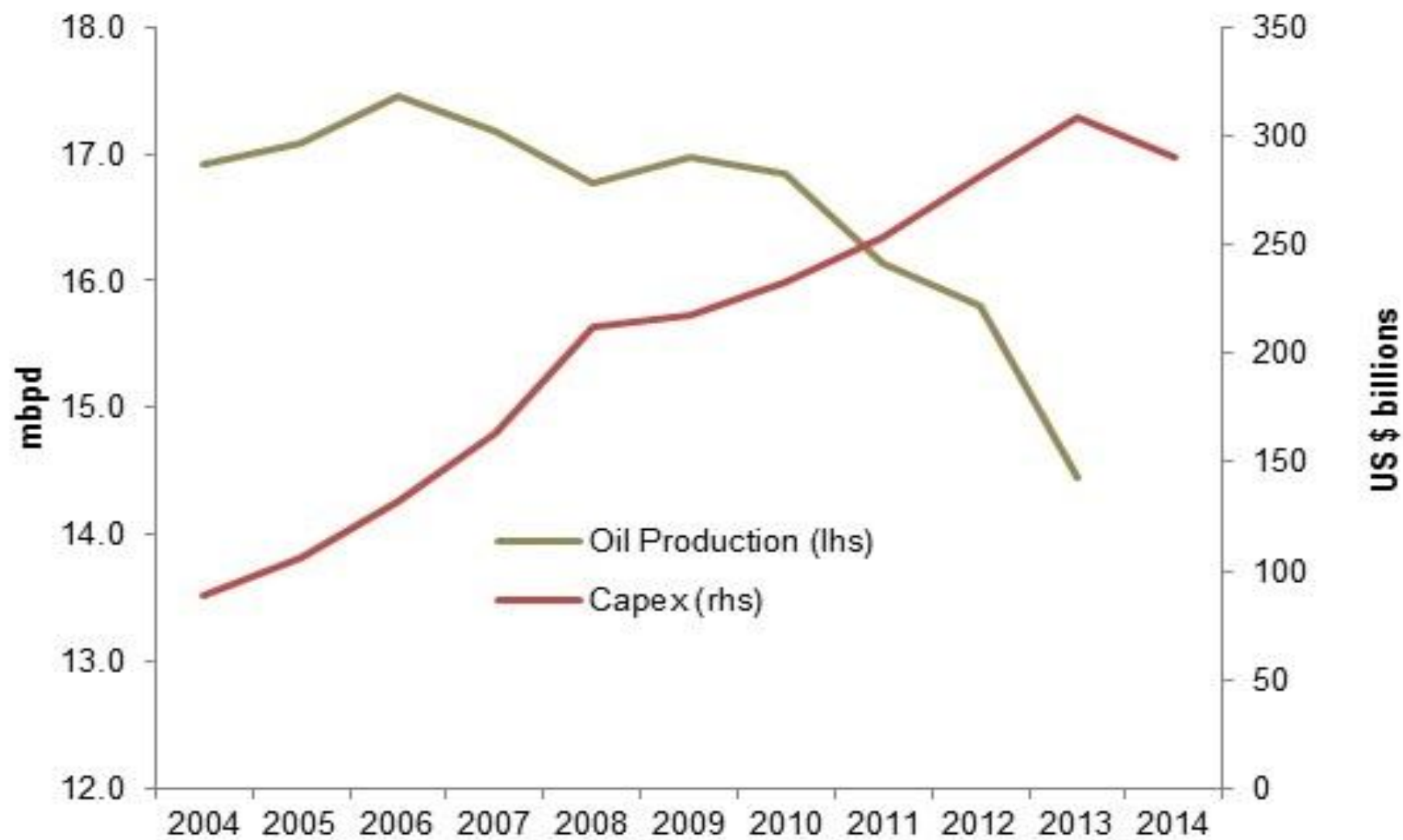
## Brent crude oil prices, June 2014-August 2015

\$ per barrel



Source: Bloomberg





### **Oil Production and Capex of Major Oil Companies**

*Combined data for BG, BP, COP, CVX, ENI, OXY, PBR, RDS, STO, TOT, XOM*

*Source: Bloomberg via Astenbeck Capital Management*



## Declining Rigs vs Rising Production

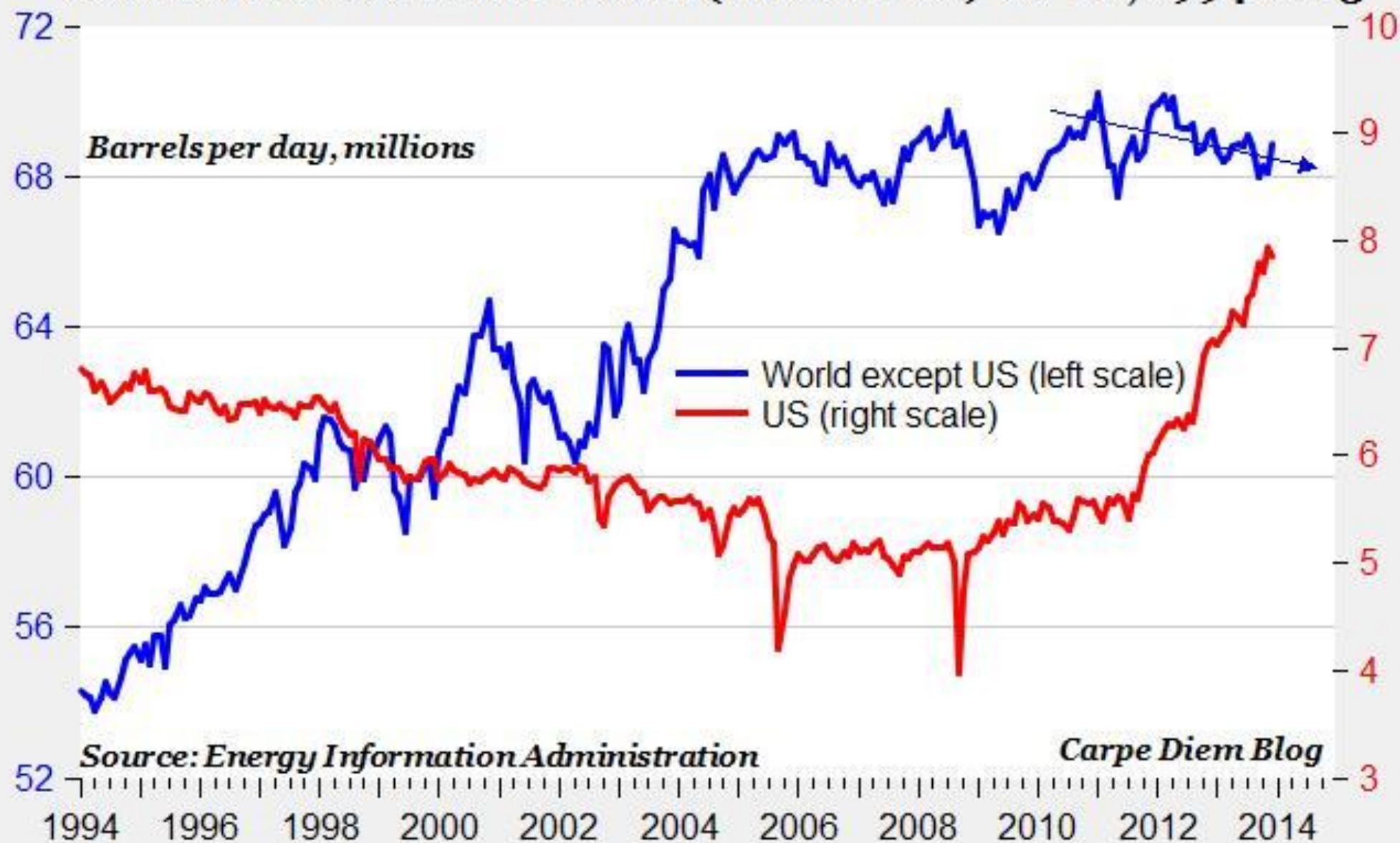


Source: EIA, Baker Hughes

Last updated: 2/26/2015



## Crude Oil Production: World (without US) vs. US, 1994-2013





## My prediction for the short-term:

- New technology ('Shale 2.0') will increase US oil production for 5-10 years, until 'sweet' reserves are exhausted
- The global recession will also reduce demand
- Oil prices are likely to remain low over this period

However,

- There is still no cost-effective replacement for oil in critical sectors such as aviation, commercial transport and agriculture.
- Prices will increase again as conventional supplies decline



# Cost of energy from renewables falling

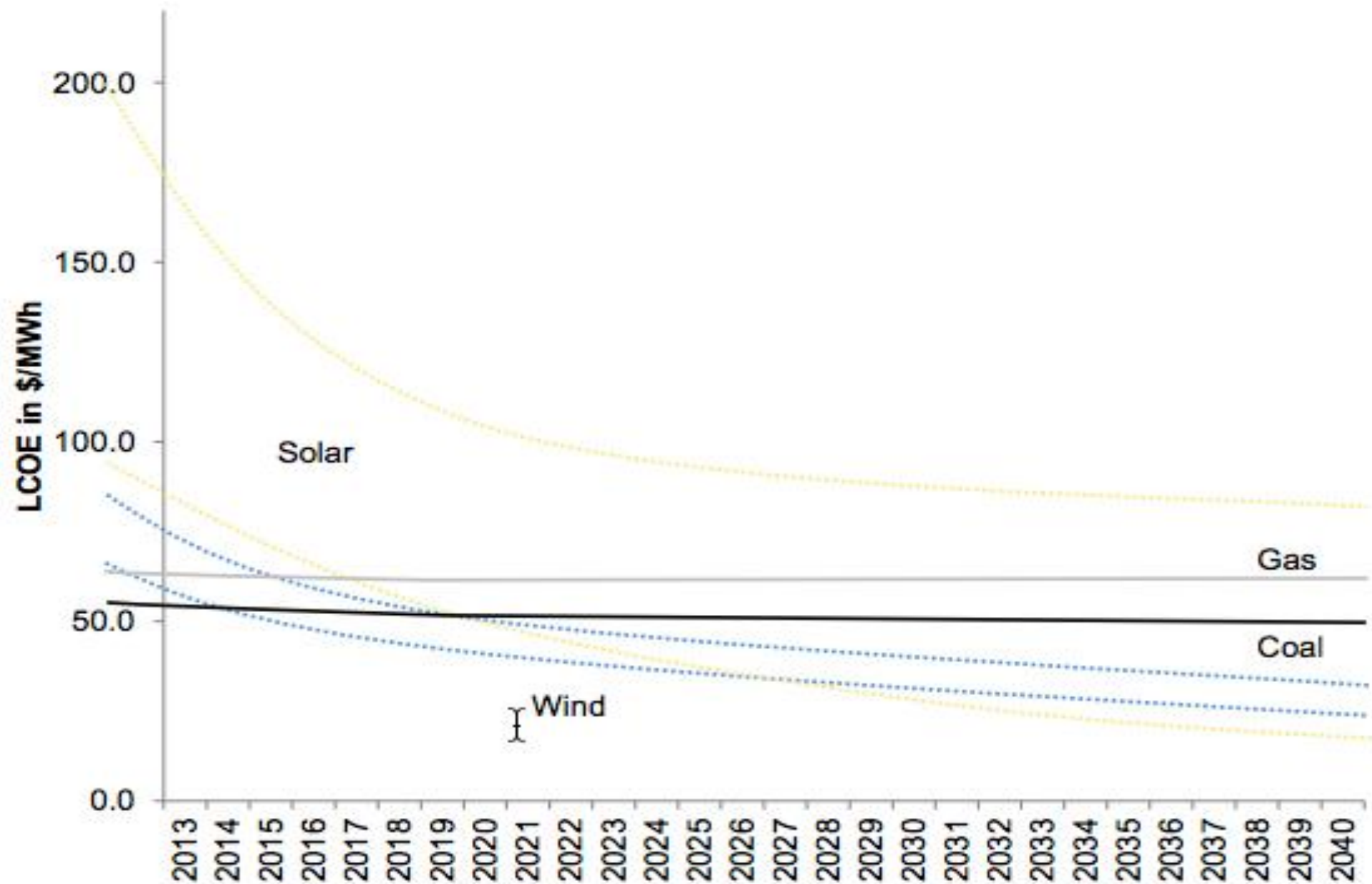
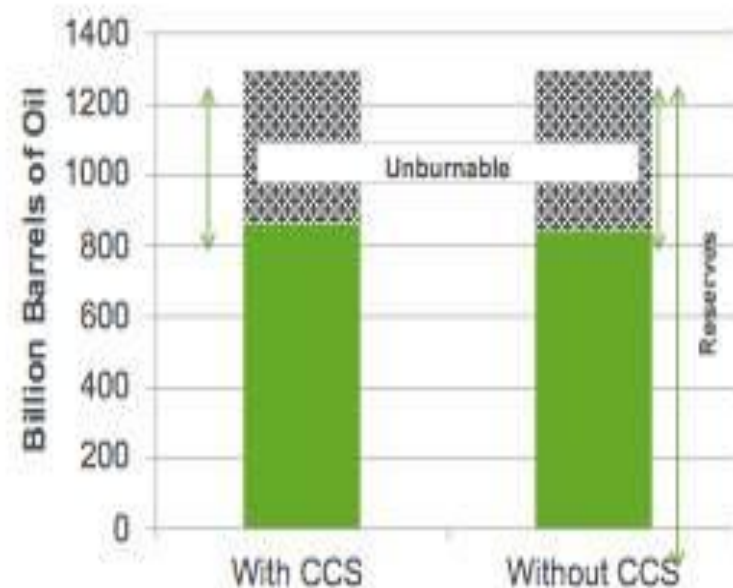
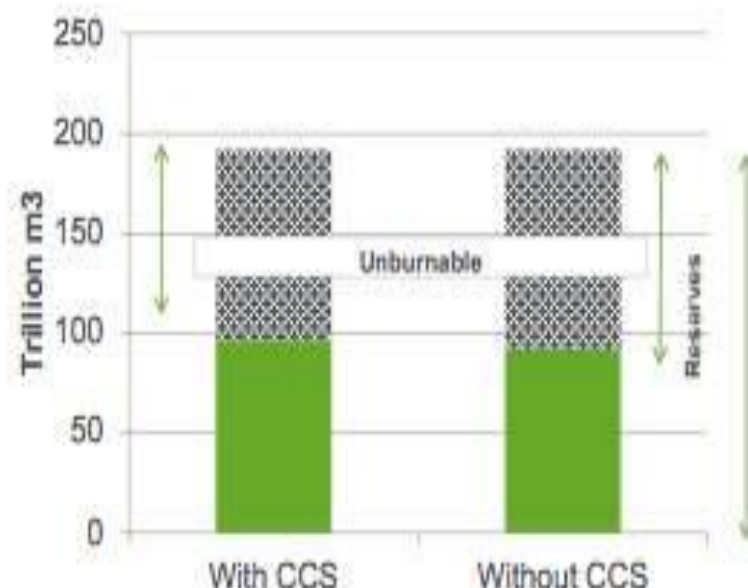


Figure 91. Total and Unburnable Oil Reserves



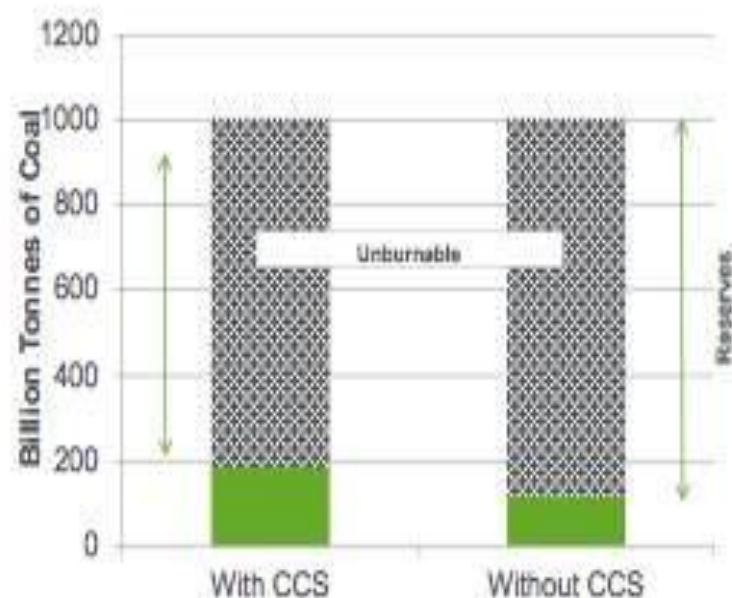
Source: McGlade et al. (2015), Citi Research

Figure 92. Total and Unburnable Gas Reserves



Source: McGlade et al. (2015), Citi Research

Figure 93. Total and Unburnable Coal Reserves



Source: McGlade et al. (2015), Citi Research

## My predictions for the medium- to long-term (10 to 30 years):

- Awareness of the dangers of climate change will continue to grow
- Larger investments will be made in clean, alternative energies
- Fossil fuels will be taxed and restricted, starting with thermal coal
- Electric and fuel-cell vehicles will dominate the vehicle market
- Alternatives to fossil liquid fuels (e.g. algal biofuels and hydrogen) will become cost-competitive and start to replace oil and gas

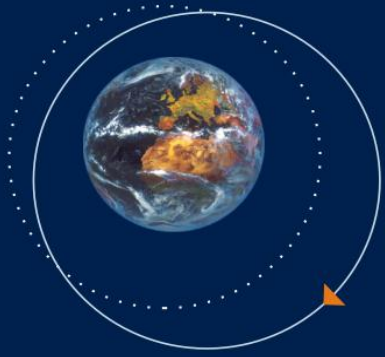




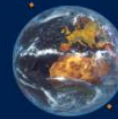
## My recommendations:

- Iran should develop an advanced renewables industry (e.g. solar electricity and hot water) to increase national security, reduce pollution and save finite supplies of valuable fossil fuels
- Iran should research non-polluting methods for manufacturing products from hydrocarbons (e.g. plastics) in order to (a) reduce climate change; (ii) develop alternative markets for oil and gas; (iii) secure a higher return for oil and gas products; (iv) develop new industries and increase employment; and (v) make Iran more economically self-reliant and secure.





# Security: the requirements for a regional peace agreement

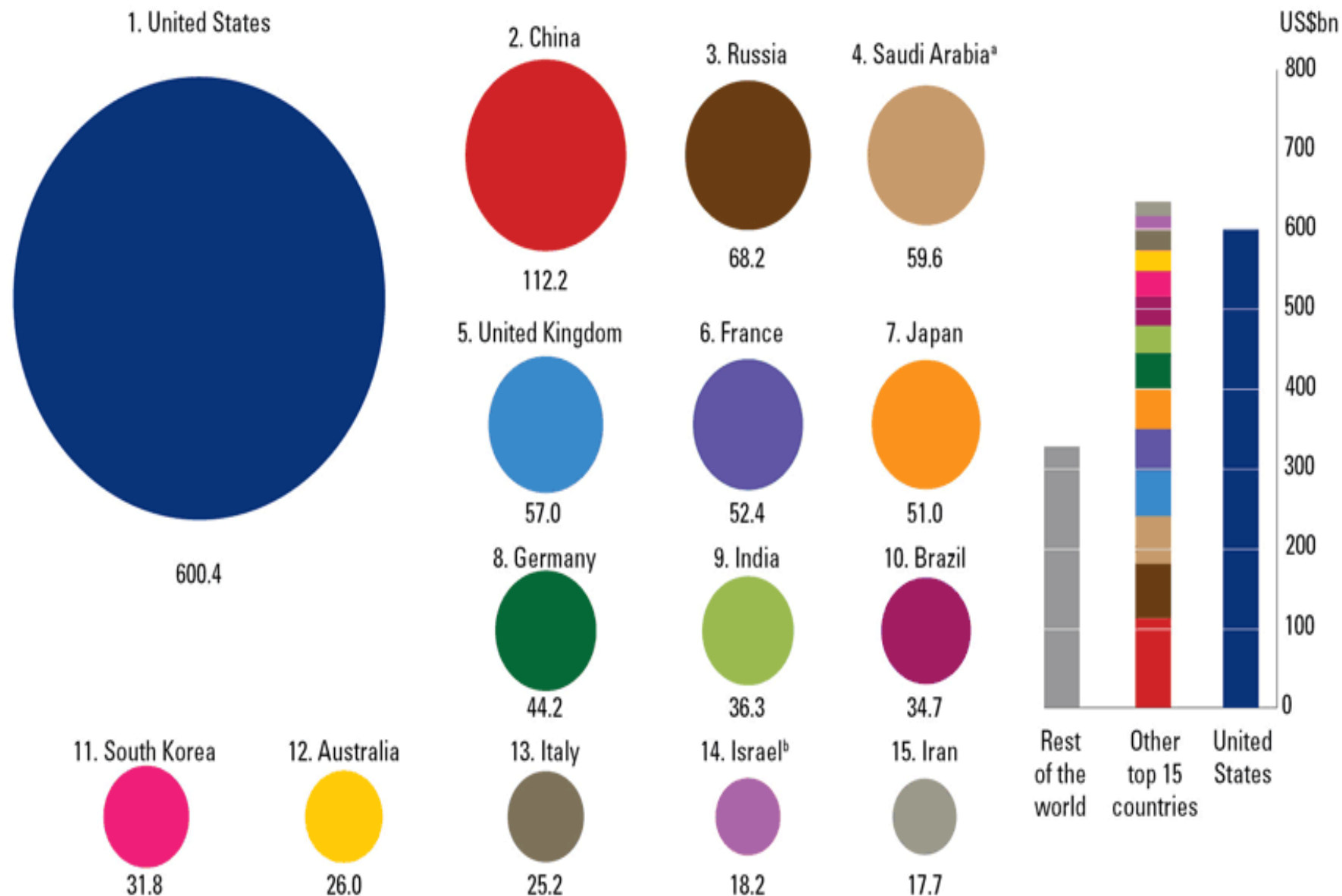


The wars in the Middle East are not only a tragedy, they are unwinnable. Because many regional and international interests are involved, no party will be allowed to secure a decisive victory.

Diplomacy is the only solution (but not with Daesh).



## Top 15 Defence Budgets 2013<sup>†</sup> US\$bn



<sup>a</sup>Estimated spending; <sup>b</sup>Includes US Foreign Military Assistance

Note: US dollar totals are calculated using average market exchange-rates for 2013, derived using IMF data. The relative position of countries will vary not only as a result of actual adjustments in defence spending levels, but also due to exchange-rate fluctuations between domestic currencies and the US dollar. The use of average exchange rates reduces these fluctuations, but the effects of such movements can be significant in a small number of cases.

It is obvious that Iran has a defensive military strategy.

So why have the United States and Israel been able to convince many countries that Iran is an international threat?





## To increase its soft power Iran could

- Lead an international campaign to win support for a nuclear-free Middle East (opposed by US and Israel).
- Lead negotiations for a comprehensive Middle East peace agreement based on international guarantees of security for all nations, religions and ethnic groups. (The agreement can have a time limit, postponing the settlement of many difficult issues—e.g. the existence of Israel—for 15 or 30 years.)

