BLR & Partners AG
Building Valuable Businesses
Built on Values

THE ENERGY SECTOR AND FUTURE PERSPECTIVES

Some thoughts

for those who own the future

…from one who has the future behind

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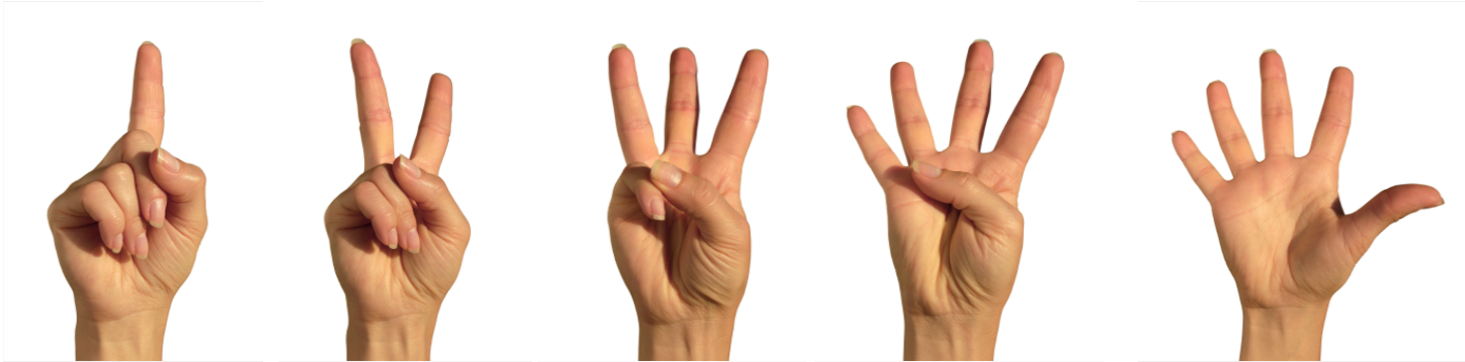
Ulf Berg ● Ulrich Jakob Looser ● Hans Rauber ● Ulf Claesson ● Peter Greutert ● Bruno Bonati ● Peter Kurer ● Felix Weber
BLR&Partners AG ● Tischenloostrasse 59 ● CH-8800 Thalwil

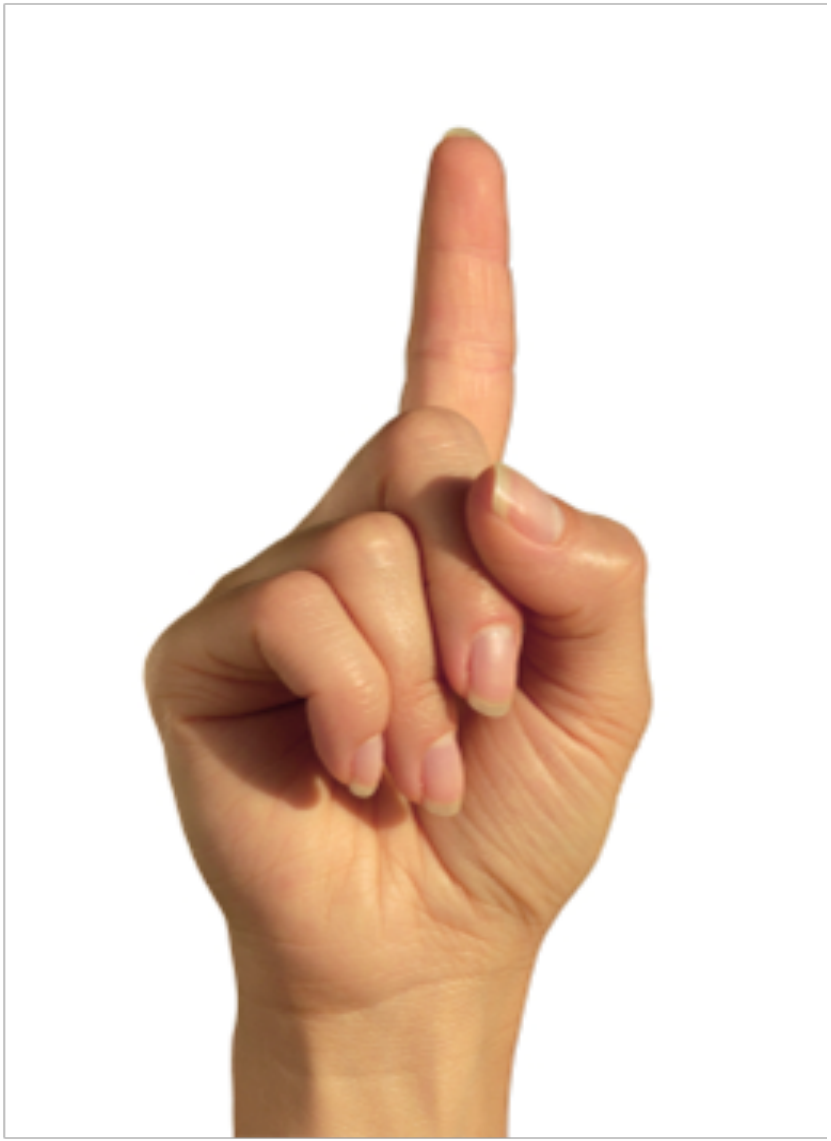
5 Themes

1. The role of energy
2. Sources and uses of energy
3. Titans and dinosaurs
4. 5cts worth…where are we heading
5. Giving advice is a vice.. But

Some thoughts for you
who own the future and MUST shape it….



1. The role of energy



Energy

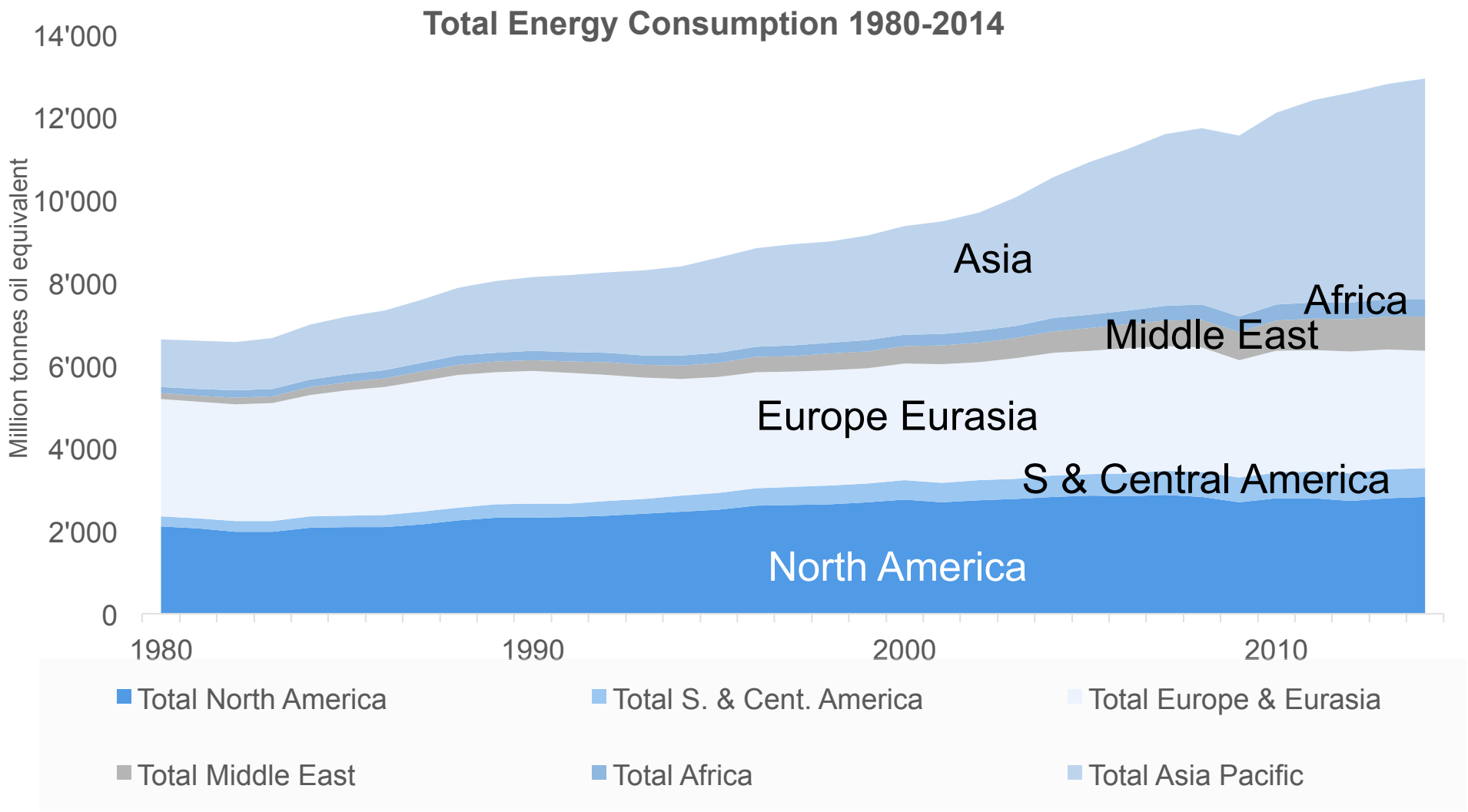
Your personal Energy
is stronger than
any other attribute of ***you***
It will outdo your
IQ, Your Handsomeness, Your ….

Worlds Energy supply is equally
at least one of the most important attributes for
Stability
Personal Wealth
Peace

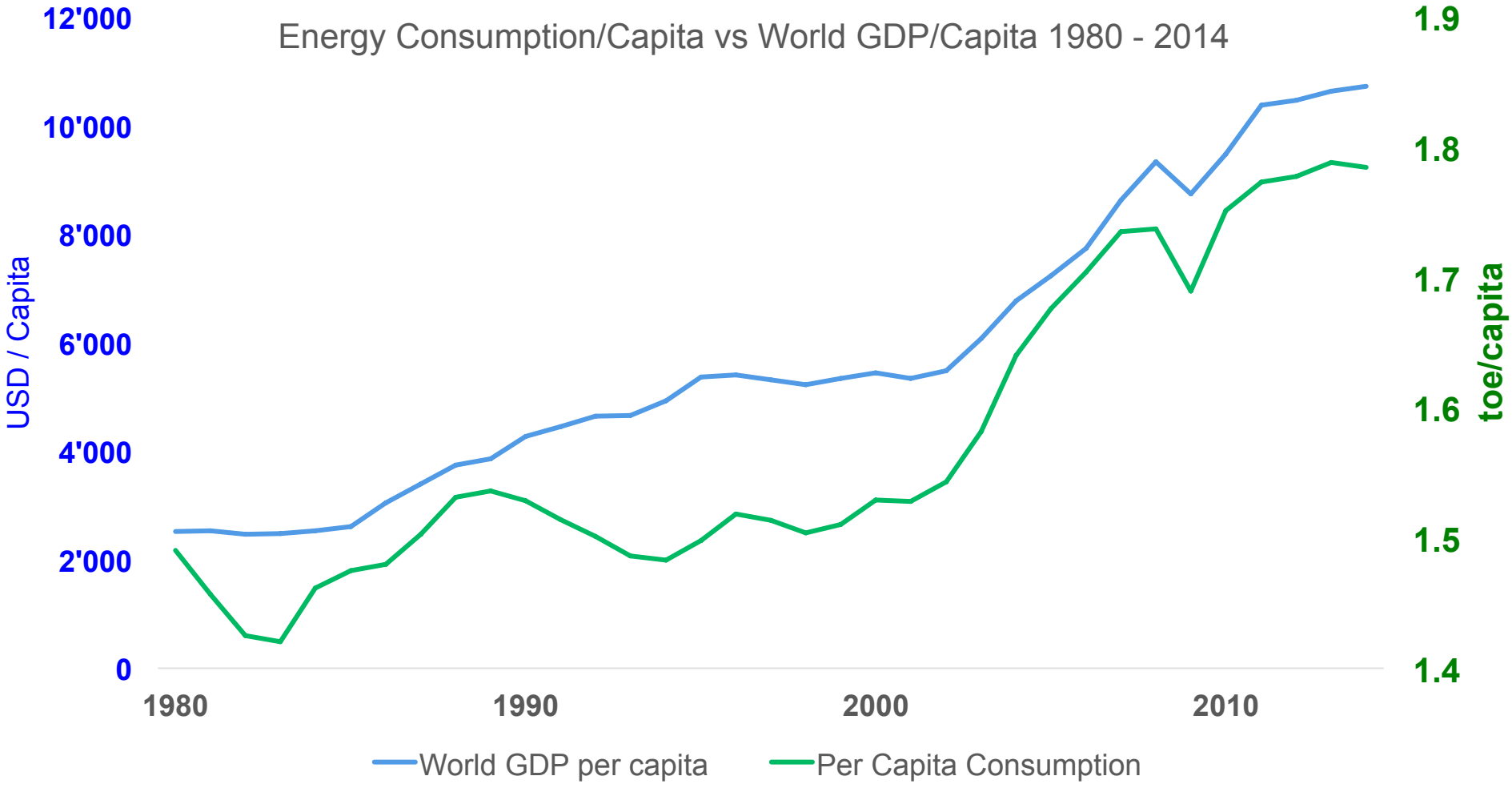
→ but not the only one

Energy Consumption has been increasing

mostly non-OECD

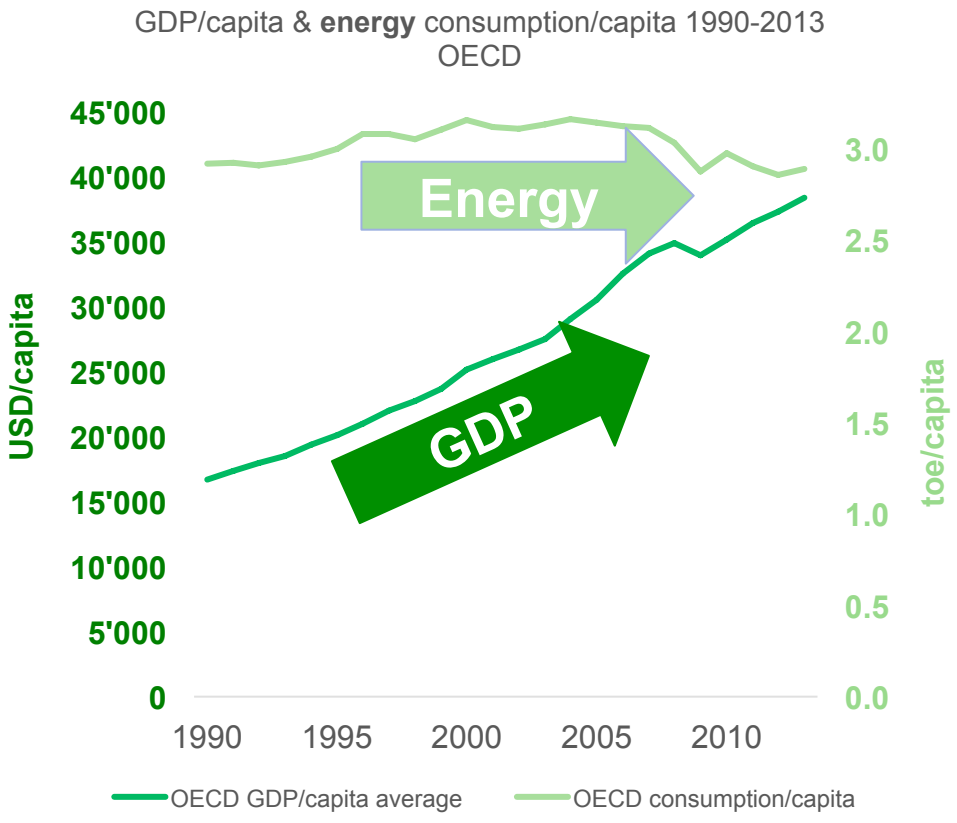


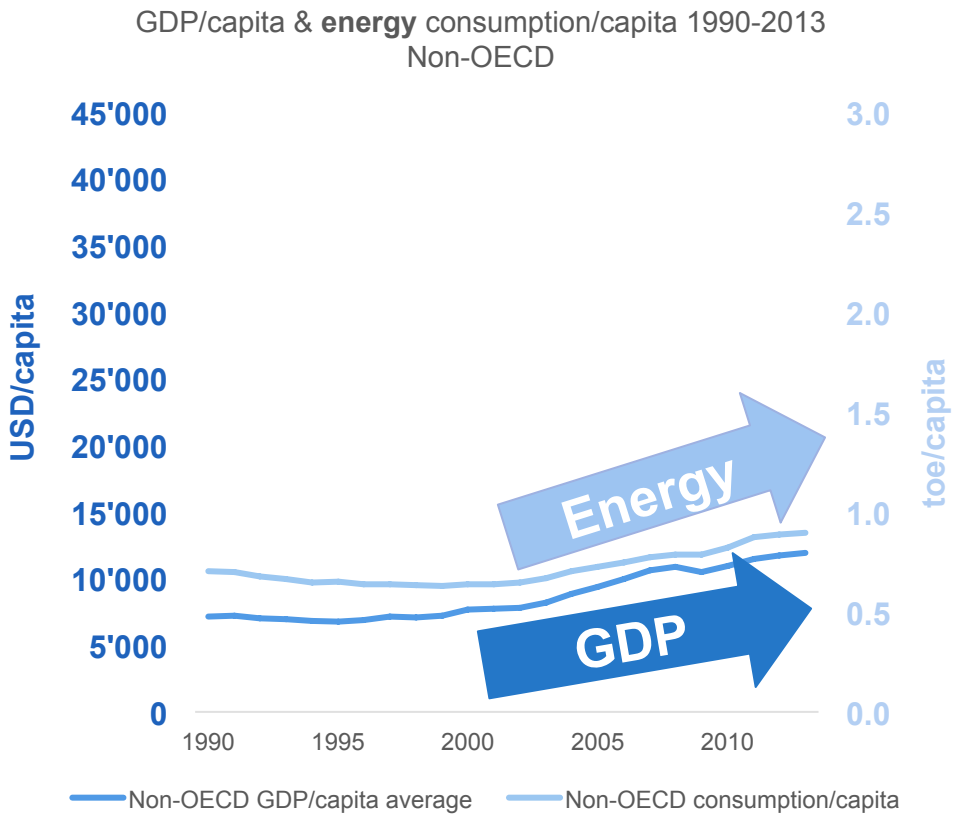
Close relation GDP/Capita and Energy/Capita



Looks logical doesn't it?

… A little more Granularity OECD vs non-OECD

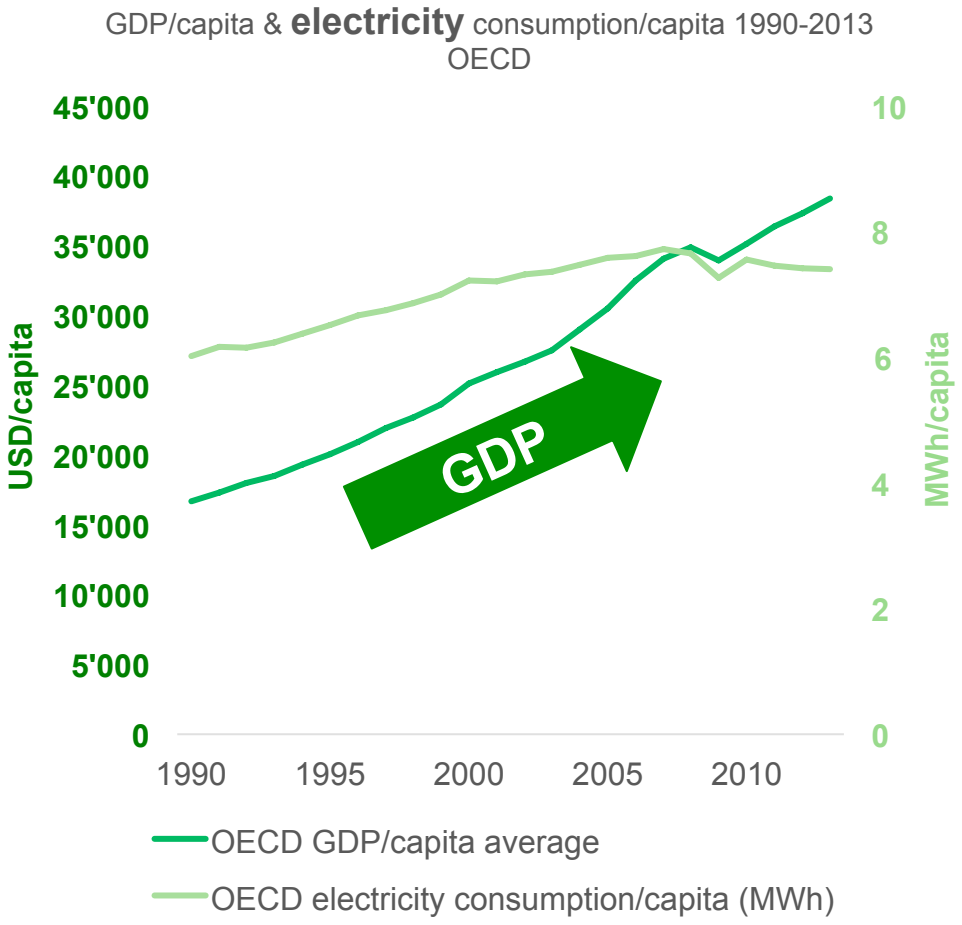




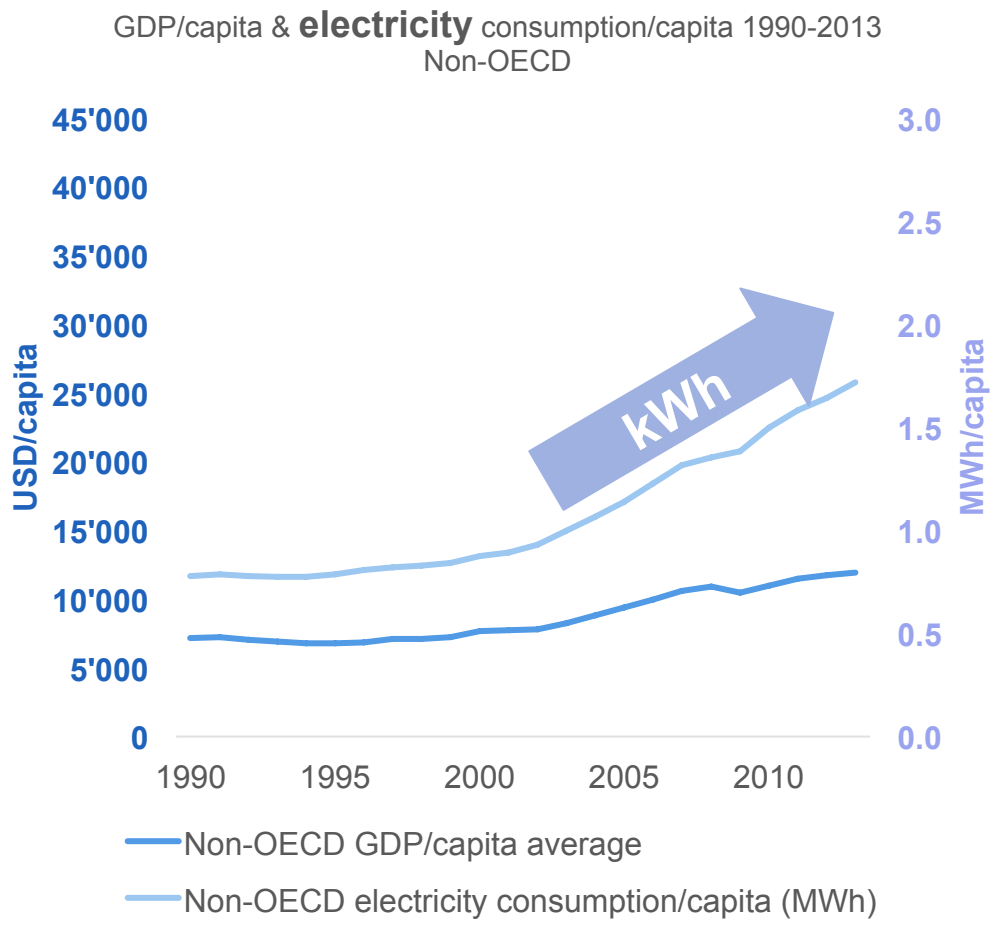
OECD has decoupled GDP & Energy

Non-OECD will need some Years and then will decouple GDP & Energy

… A little more Granularity OECD vs non-OECD



OECD
GDP ↗
Electricity ➔

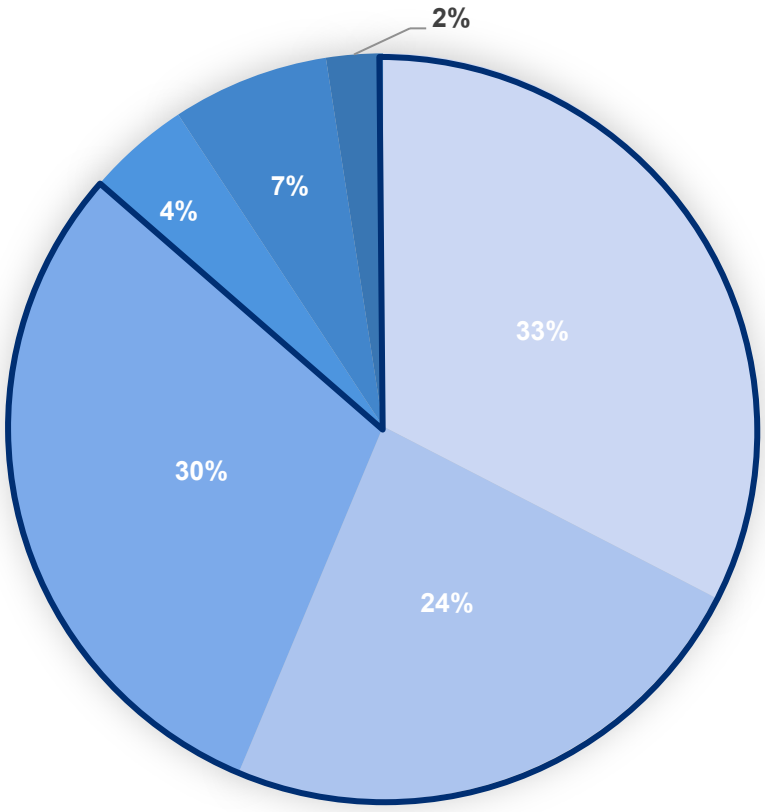


Non-OECD
GDP still "➔"
Electricity ↗ a prerequisite for GDP

2. Sources and uses of energy

The sources of Energy

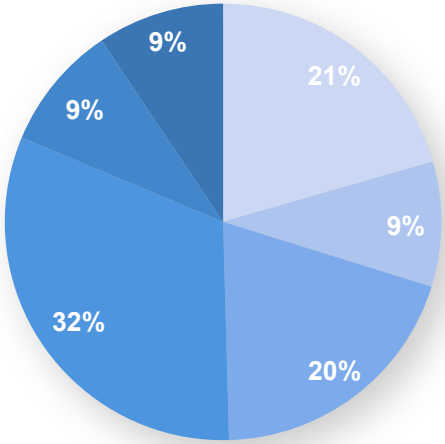
World Consumption by Fuel 2014
(Total: 12‘928 mtoe)



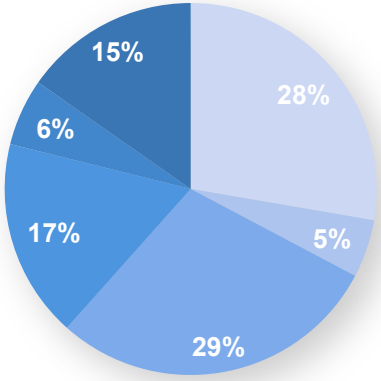
Oil
Natural Gas
Coal
Nuclear Energy
Hydro electric
Renewables

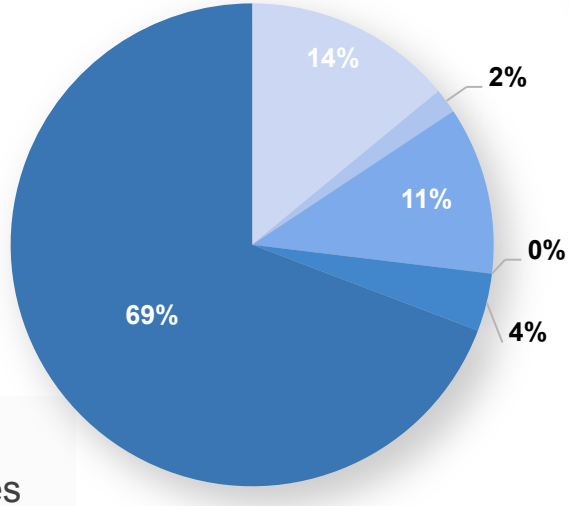
Fossil Energy: 87%

Oil: Production 2014
(Total: 4’226 mt)



Natural Gas: Production 2014
(Total: 3’127 mtoe)

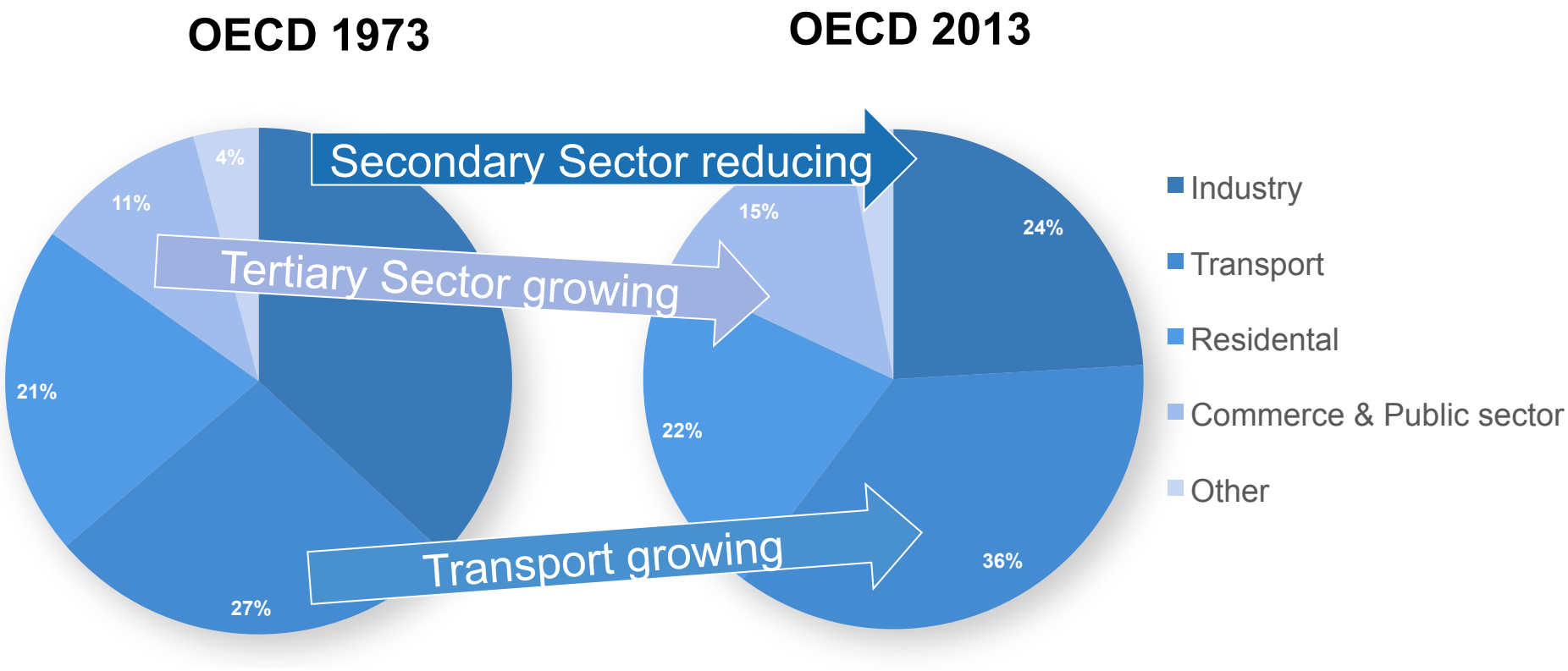




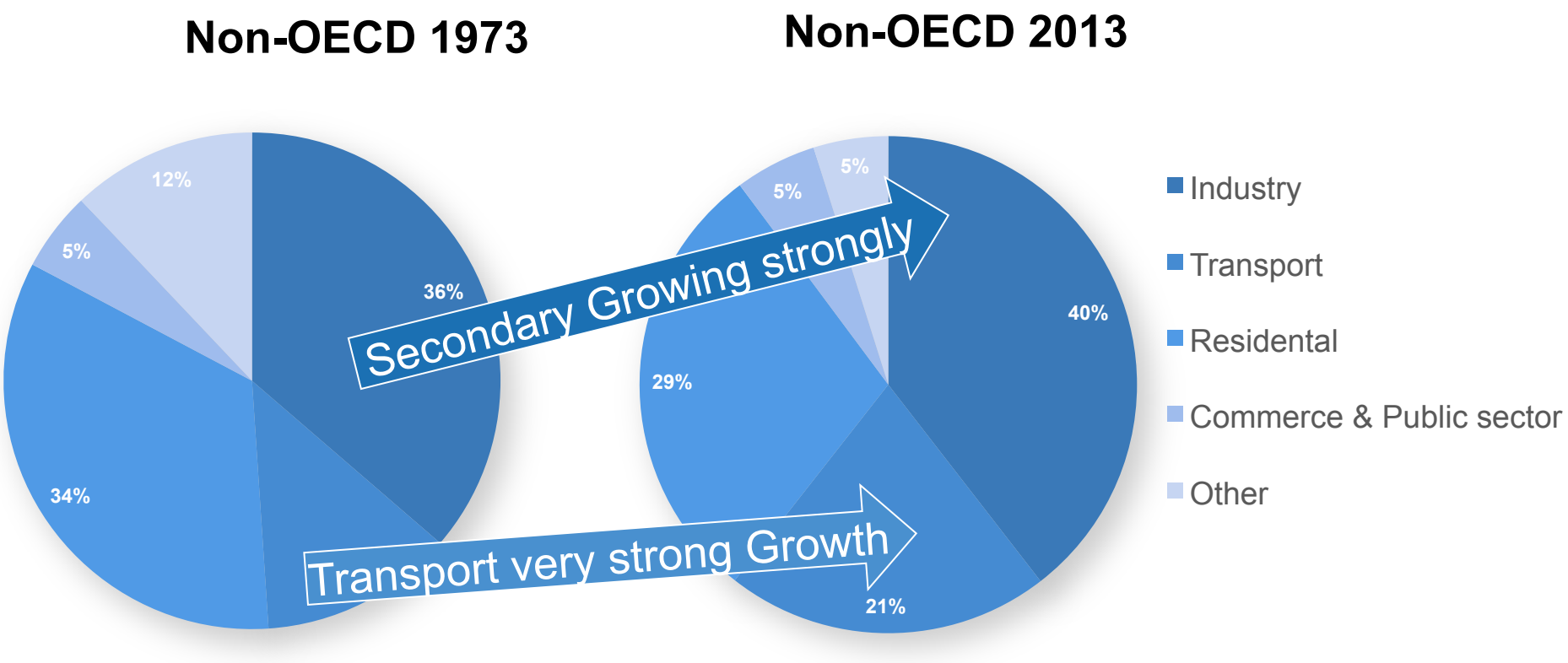
Coal: Production
(Total: 3’934 mtoe)

Total North America
Total S. & Cent. America
Total Europe & Eurasia
Total Middle East
Total Africa
Total Asia Pacific

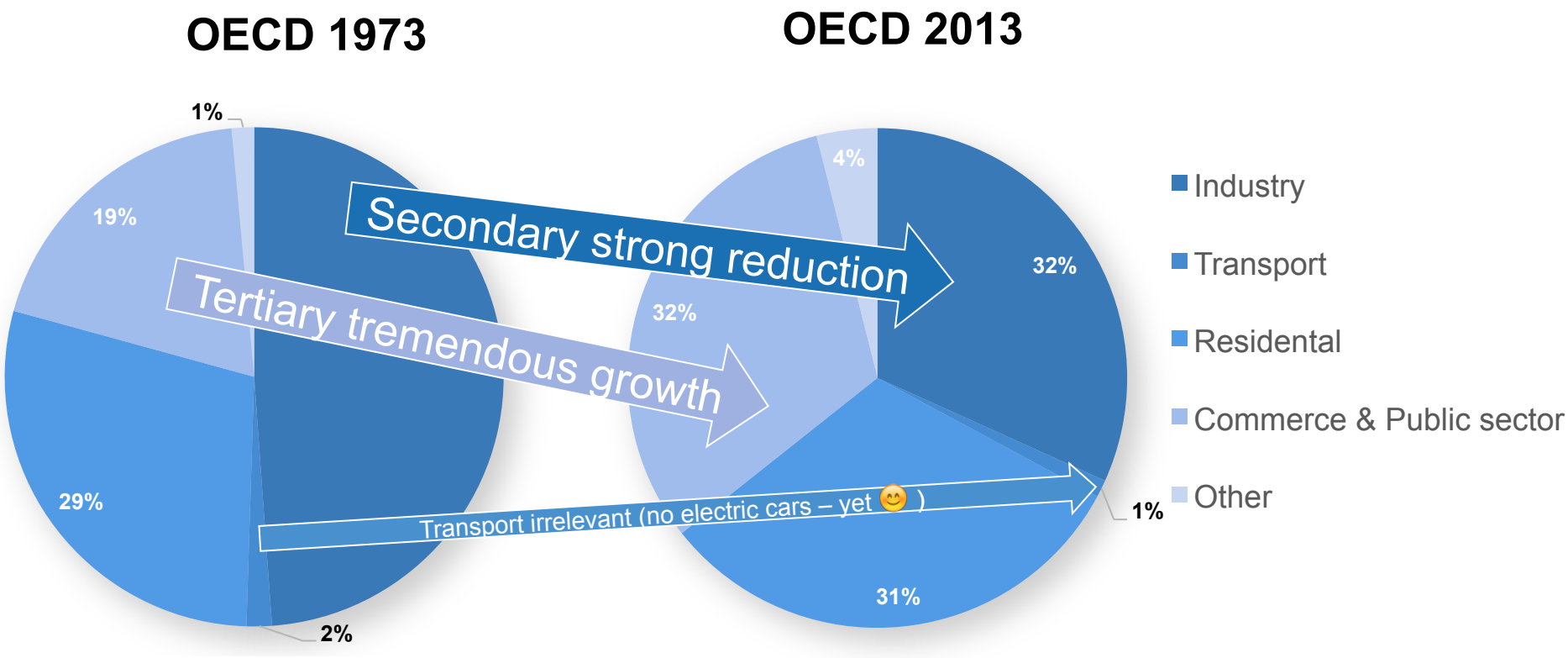
The uses – *Energy*



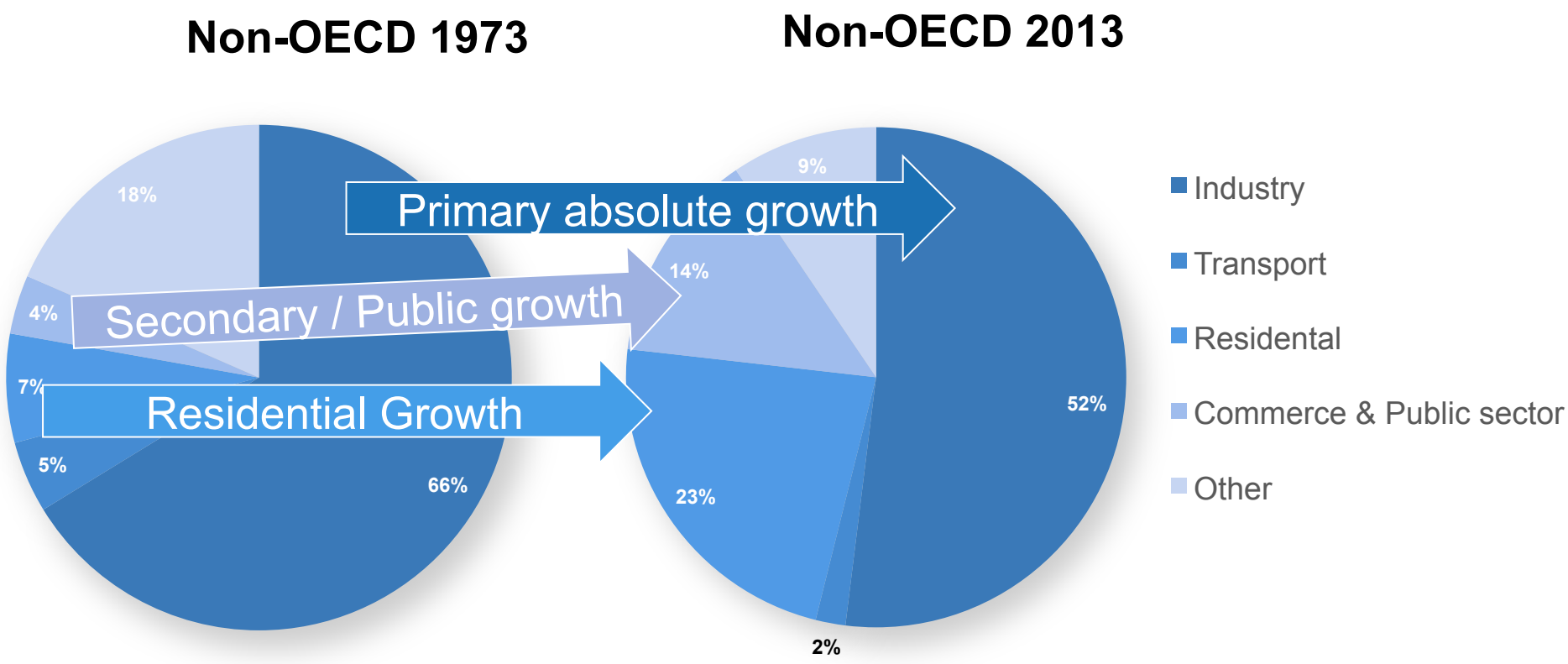
The uses – *Energy*



The uses – *Electricity*



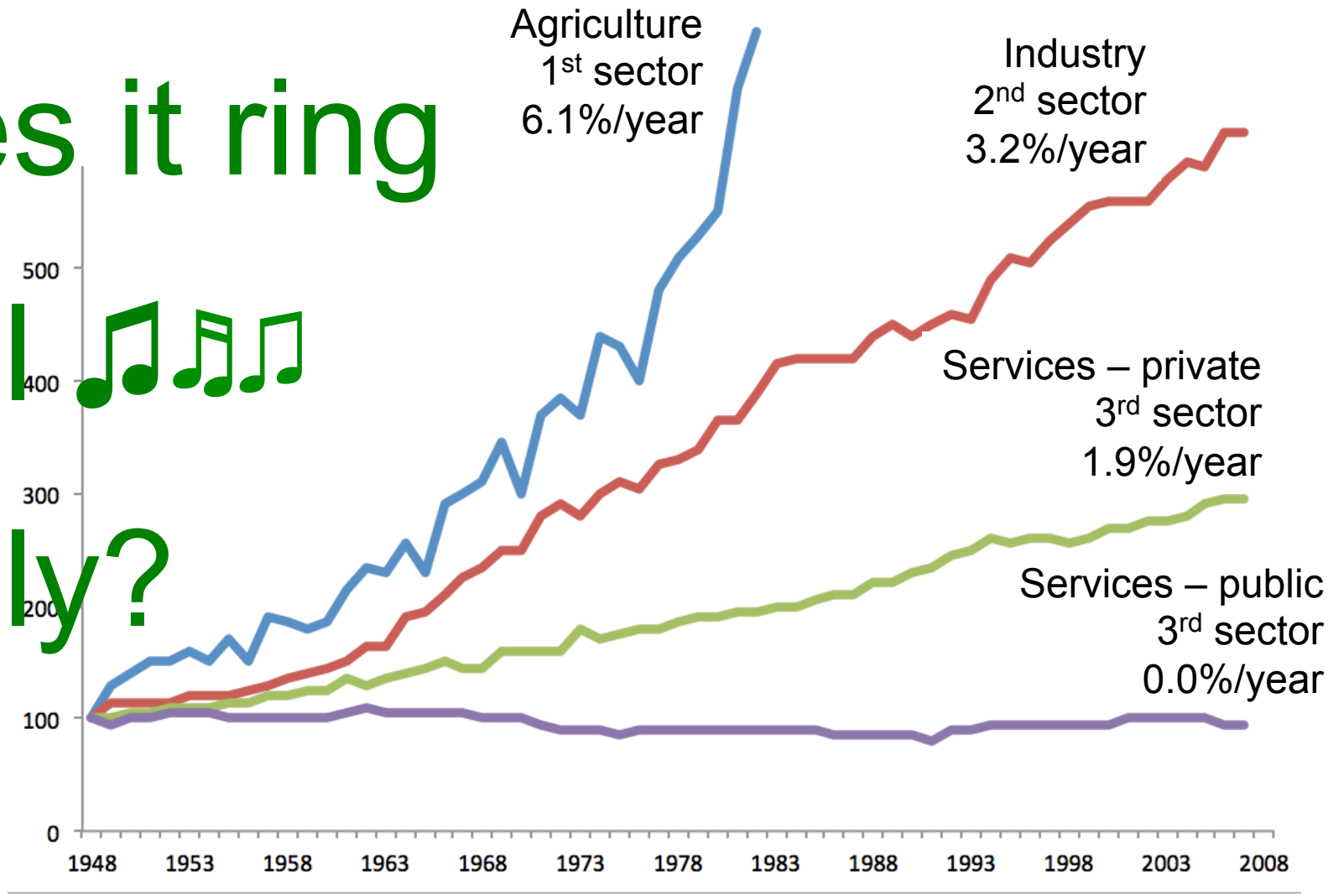
The uses – *Electricity*



Why this shift in energy Consumption away from industry?

- Data from Denmark

- Does it ring a bell ♫♫♫ in Italy?



The role of IT

- IT uses about 10% of world electricity
- IT server-farms & data-centers use > 4% of world electricity
- Every time you hit “a Google Search” it is equivalent to boiling a cup of tea!
- No wonder the IT industry is adamant about renewables

Personal Energy ←→ World energy

- Important for world and regional prosperity
- Energy – Renewable – Electricity
  - We are all focusing on Renewables and electricity
  - Transportation and heating are way over 50%! And mostly fossil !
  - All oil consumption growth is non-OECD transportation !
- Energy
  - You remember peak oil?
  - Heard of Peak Farmland?
  - You know of Phosphor limitations?

We shall never run out of resources –
as long as we foster creativity and do not kill it by subsidies

3. Titans and dinosaurs

Who *will be* the energy players

- Titans = Dinosaurs ?

- Imagine it is 1900 – looking for a transportation company to join
  - At that time it would have been a bad choice to select horse-farms

- Today's Energy Giants - All have challenges
  - Electric utilities most challenges – Why?
    - 70 years same profit formula
    - 70 years indispensable role in society
    - Changes must occur – see Enel

Electricity Titans

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- Today's Energy Giants - All have challenges
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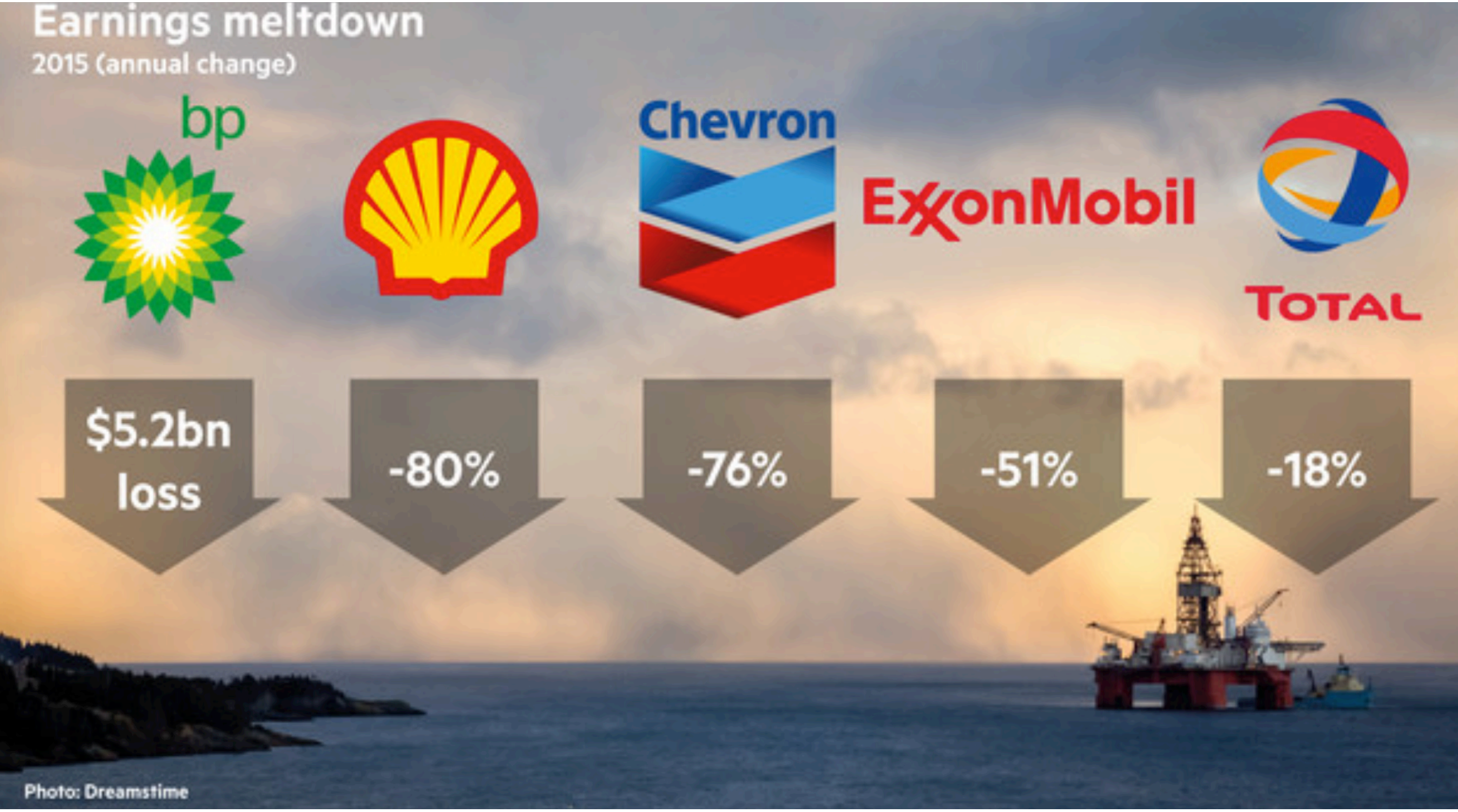
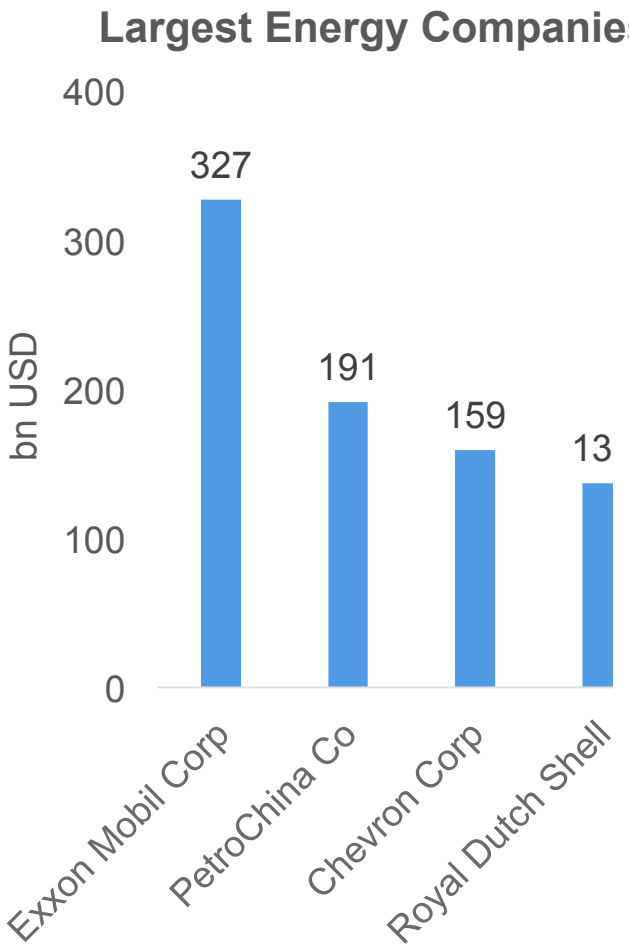
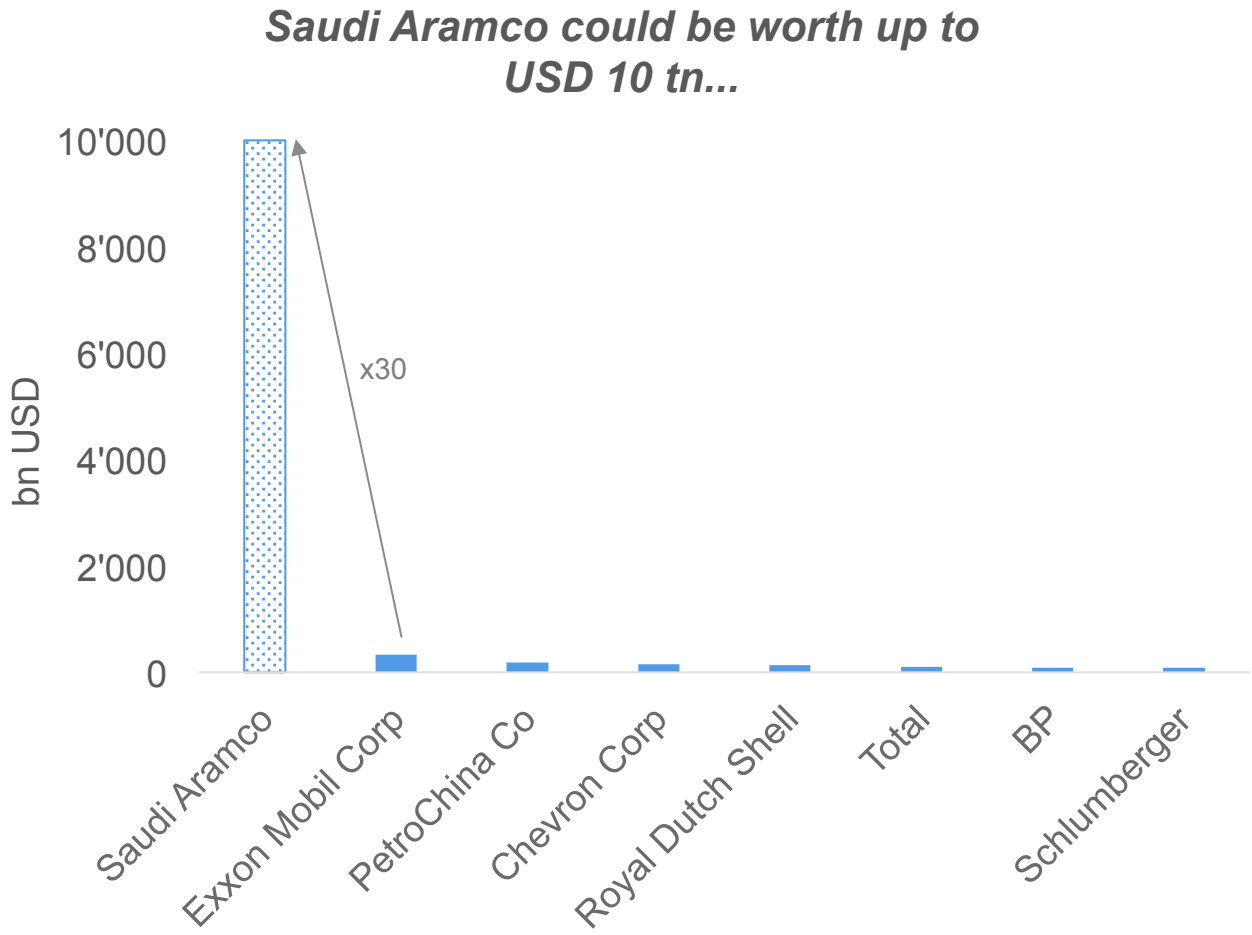
    - 70 years same profit formula
    - 70 years indispensable role in society
    - Changes must occur – see Enel
  - Energy titans
    - Fossil fuel will have a much longer track ahead
      - Xportation
      - "plastics" = 5% of oil & gas → will increase
    - But rethinking also here!!

But do not fall for “Alarmism” - Stay Cool



Energy Titans



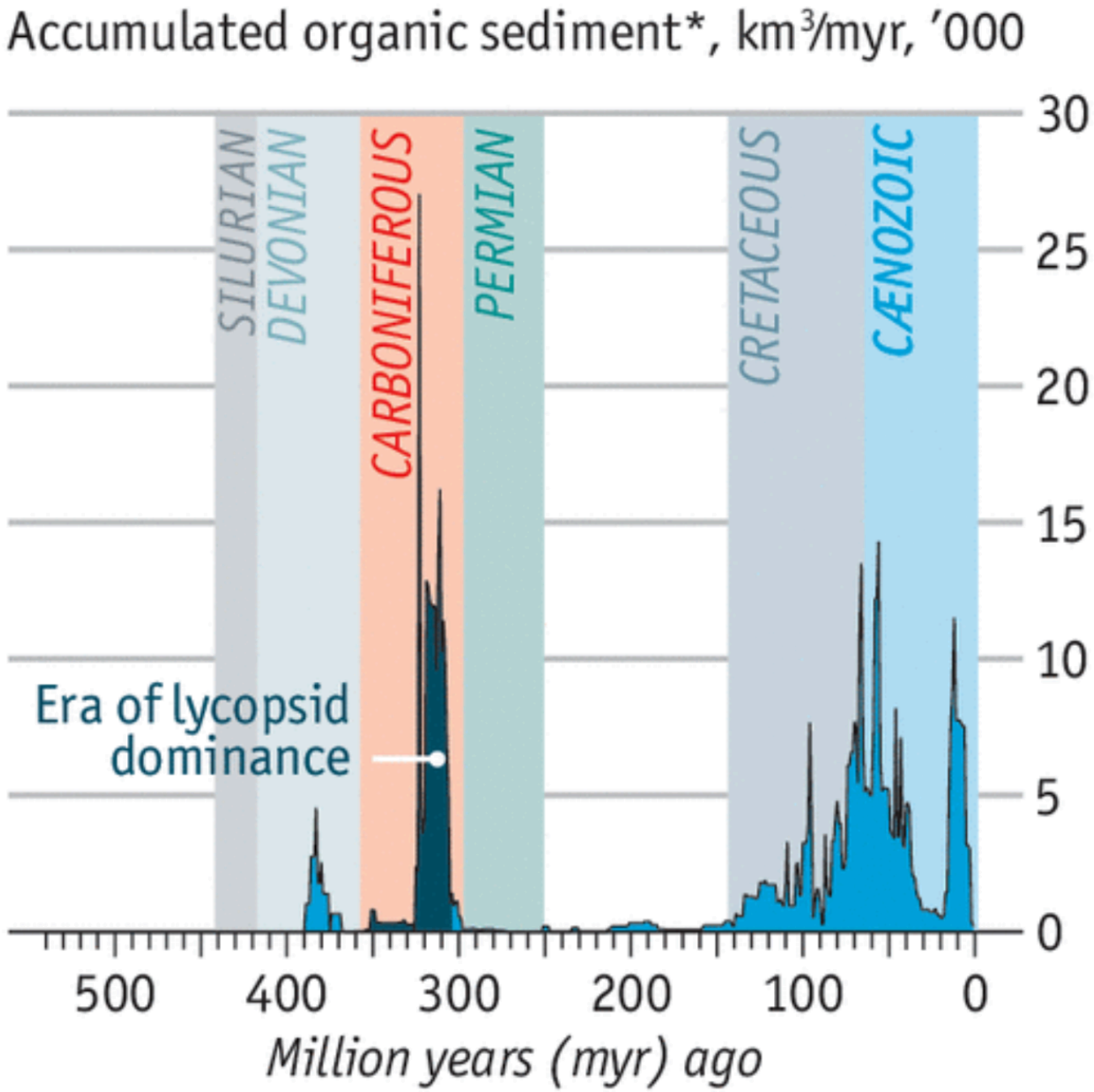


4. My 5 cts worth

My 5 cents worth…

- Electrons (both Power & Information = convergence)
  - Will be the mainstay of our living for many years
  - Decentralized Energy = Electricity – not yet but in some time
  - IT business is for the 2nd time going back to "mainframes" = Data-centers

- Energy – major disruptions
  - No love lost for Coal:
    Consumption / yr = sedimentation over 1 M years in the carboniferous periods



*Peat, lignite, coal and tar; North America only

Source: *PNAS*

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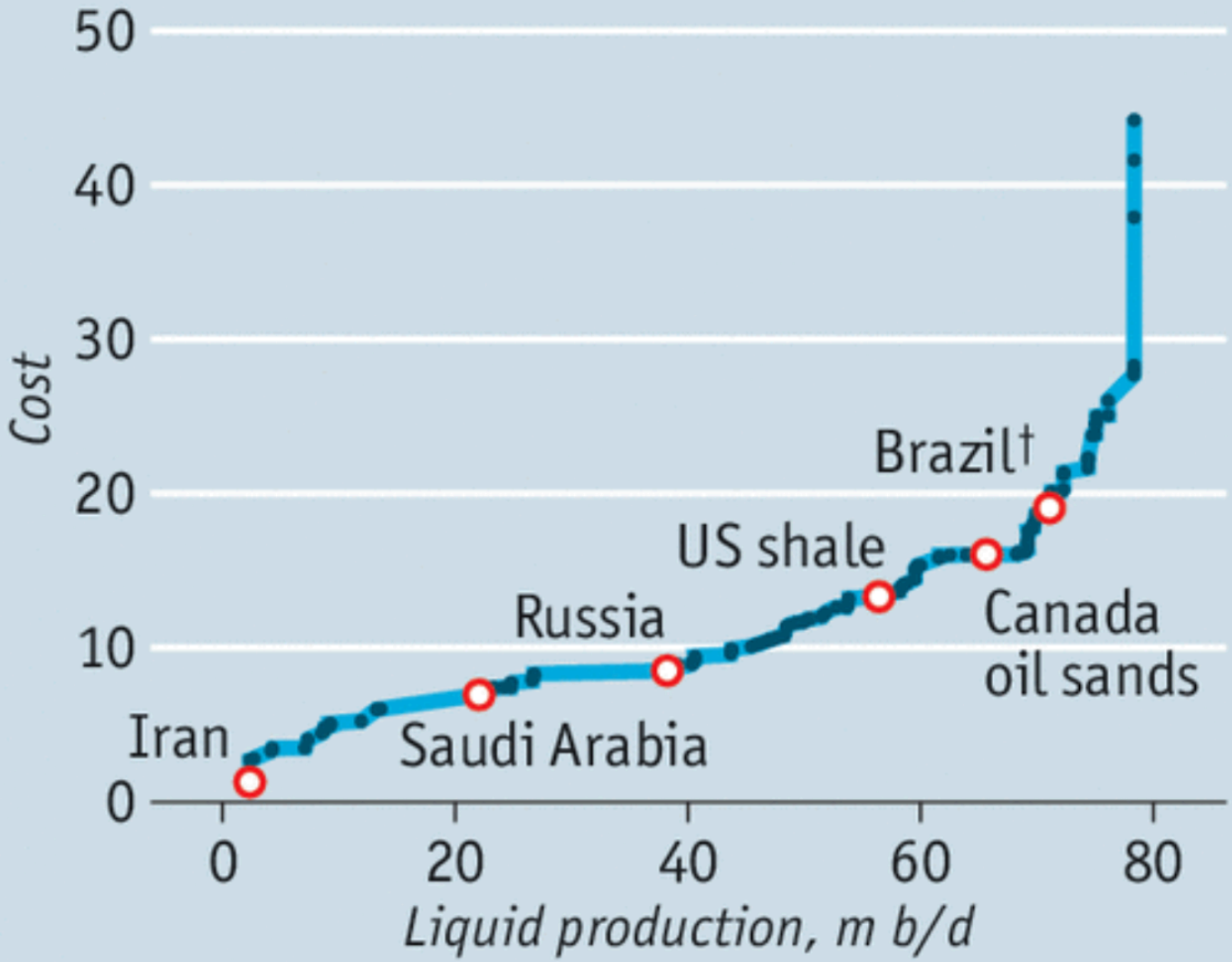
- Energy – major disruptions
  - No love lost for Coal:
    Consume / yr = sedimentation over 1 M years in the carboniferous periods
  - Oil price above Cash cost ***but: below most country budgets!!***
    We are starting to see a slow de-coupling Oil - GDP

Cash cost of onshore oil production*, 2015

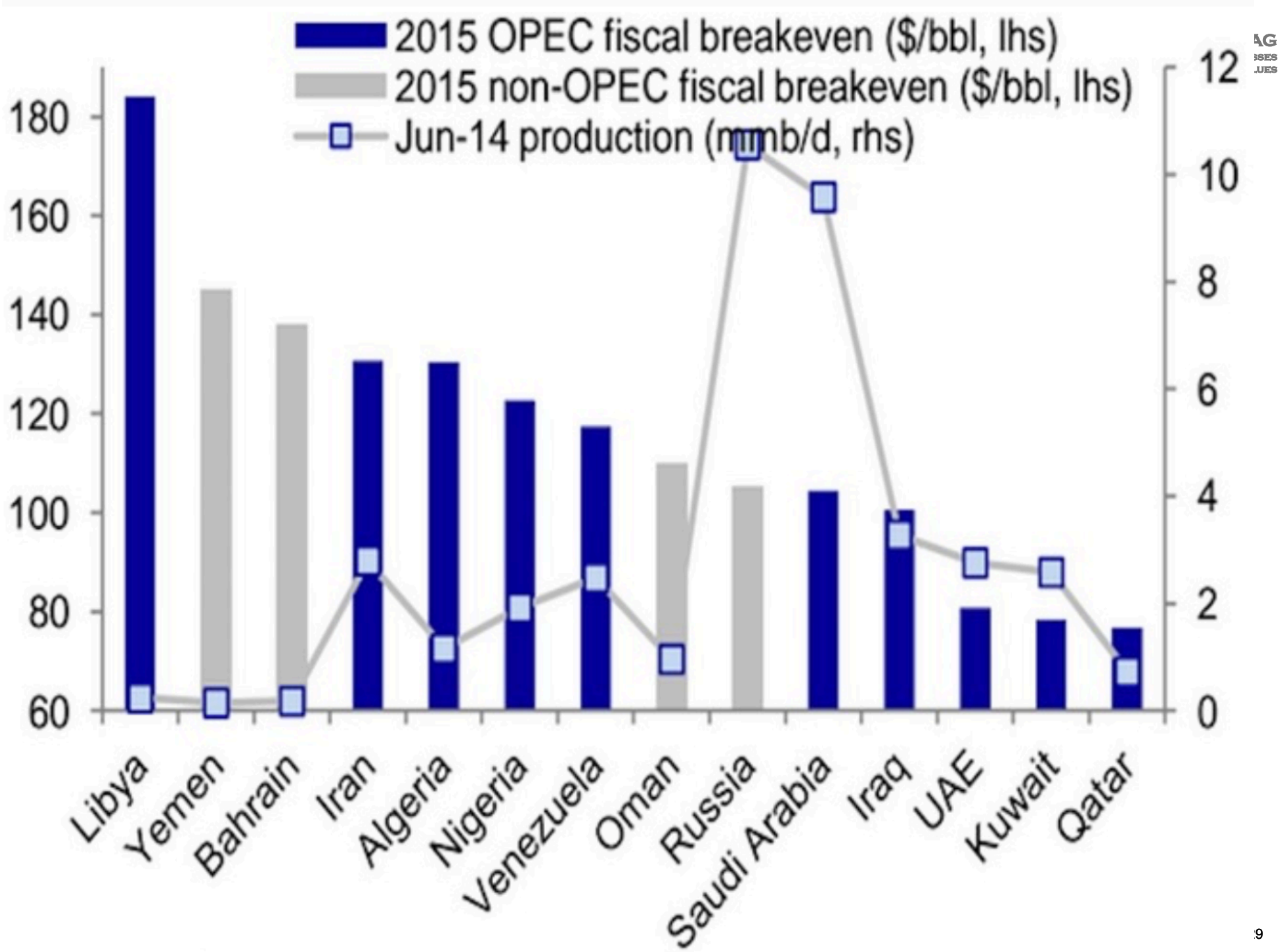
$ per barrel of oil equivalent



Sources: Wood Mackenzie; Citi Research

*Includes royalties

†Deepwater


2015 OPEC fiscal breakeven ($/bbl, lhs)
2015 non-OPEC fiscal breakeven ($/bbl, lhs)
Jun-14 production (mmb/d, rhs)
180
160
140
120
100
80
60
12
10
8
6
4
2
0
Libya
Yemen
Bahrain
Iran
Algeria
Nigeria
Venezuela
Oman
Russia
Saudi Arabia
Iraq
UAE
Kuwait
Qatar

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- Energy – major disruptions
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    Consume / yr = sedimentation over 1 M years in the carboniferous periods
  - Oil Cash cost below most country budgets!!
  - New Gas in Mediterranean: Leviathan, Zohr, ….

TURKEY
GREECE
There is an ongoing dispute over defining the continental shelf and EEZ * between Turkey and Greece.
TURKEY
Mersin
İskenderun
POTENTIAL OIL AND GAS FIELDS
70 km
SYRIA
Kyrenia
CYPRUS
Limassol
Larnaca
MEDITERRANEAN
SEA
01
02
D3
3D
LEBANON
04
05
06
07
D2
08
09
13
265 km
10
11
12
noble energy
GAS POCKETS
Haifa
360 km
ISRAEL
SHELL OIL WELLS
Port Said
EGYPT
* Generally a state's Exclusive Economic Zone (EEZ) extends to a distance of 200 nautical miles (370 km) out from its coastal baseline. The exception to this rule occurs when EEZ's would overlap; that is, state coastal baselines are less than 400 nautical miles apart. When an overlap occurs, it is up to the states to delineate the actual boundary. Generally, any point within an overlapping area defaults to the most proximate state.
cypmaps © hans doeleman

My 5 cts worth…

- Creativity
  - Subsidies have stymied creativity and more importantly R&D
  - Proper Principle of Subsidies:
    - The smartest guy in the room makes money with subsidies
    - Not every man on the street corner
  - If 30% of last 10 years subsidies would have been invested in R&D
    → Solar Panel Efficiency 35%+ ??
- But let us not panic
  We had the 3'rd cycle in Renewable – now the turning point
- "Alarmism" - The business and power of fear
  in public communication and journalism
  → Stay cool

5. Giving advice is a vice.. But

Some thoughts for you who own and shape future...

Take charge

Use your energy

Do not take no for a no

Stay cool and realistic when deciding
Build upon the SAFE learning