



Strategic Advisors in Global Energy

Crisis & Beyond

Outlook for South-East Europe

Prepared for IENE

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June 2009



Major Changes Since 2008 – The Economy



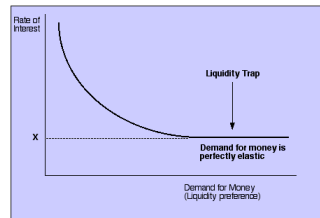
Housing bust

- Subprime crisis (end 2007)
- Bust of most inflated housing markets - Spain, UK, US,... (1H08)



Financial meltdown

- Lehman (Sep08)



Liquidity trap (3-4Q08)

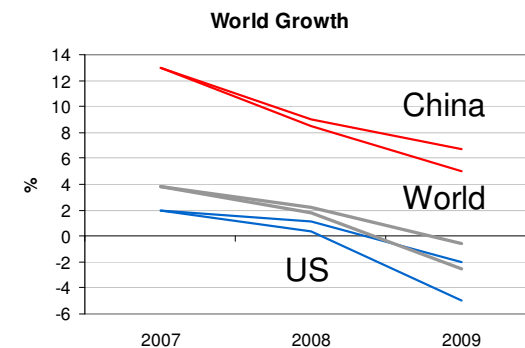
- Nominal interest rates close to zero
- Massive deflationary pressure
- Credit freeze



Real economy contagion (4Q08)

- Collapse of exports
- Collapse of manufacturing

However, real cause of crisis is excessive reliance on debt and over-allocation of capital to speculative activities (real estate, leveraged M&A) fueled by lax monetary policy



Major Changes Since 2008 – Obama

- **Obama elected in November by a large majority**
 - Democratic majority in House and Senate
- **A break with some policies of the Bush administration**
 - Closure of Guantanamo Bay
 - Dialogue with Iran
- **Desire for the US to reengage with the global community**
 - US keen to provide leadership
 - Engagement on climate policy



What Can We Expect? – The Economy



Short-Term (2009-2011)

- **Global economic crisis is very deep**
 - GDP projections for 2009 keep being revised downwards
 - Germany, UK, US could all contract 3 to 5% or more this year
 - China will have difficulty in growing more than 6%-7%
 - World will contract close to 1.5% to 2%
- **2010 outlook remains problematic**
 - Stimulus package likely to have limited effect – potential « W » effect
 - Mature countries could continue to contract in 2010
 - Limited rebound in EM expected
 - World probably see mild growth
- **2011 should see more recovery**
 - Moderate in mature countries
 - More significant in Emerging Markets

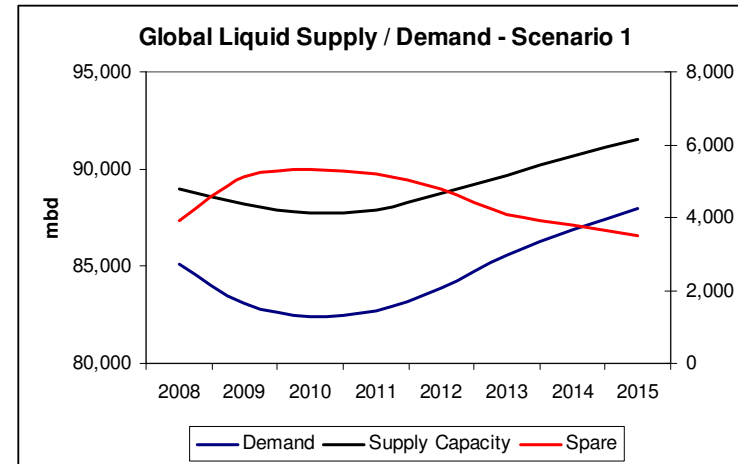
Medium-Term (2012-2020)

- **Big differences between countries**
 - Countries in better initial shape more likely to see sustained rebound
 - China, Germany, ...
 - Asian EM will emerge in stronger relative position
 - More closely regionally integrated
 - Highly indebted mature countries will suffer long hangover
 - US, UK
 - Eastern Europe will have to reduce debt
- **World will not return to pre-crisis levels of growth**
 - Was based on unsustainable, bubble model
 - New sources of growth will have to be found
 - More consumption in EM
 - More productive investment in mature countries
 - New energy model

What Can We Expect? – Oil

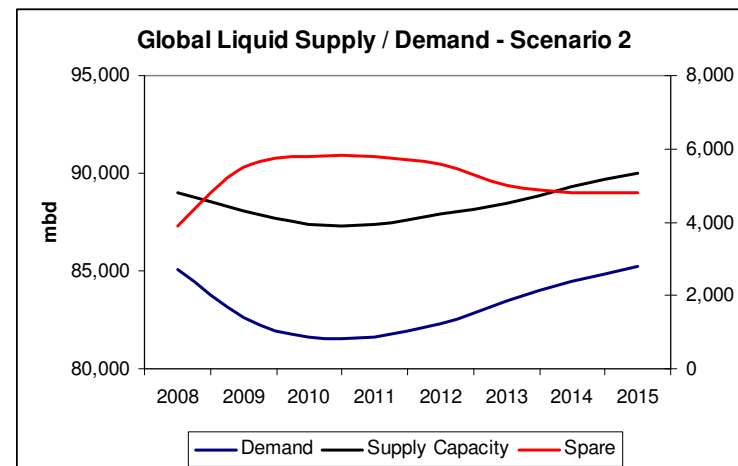
- **The crisis is having a significant impact on demand**
 - Demand has been destroyed globally
 - Europe and North America hit first
 - But Asian demand has also declined
- **The length and depth of the crisis will determine:**
 - How much demand is taken out
 - When demand will recover
- **PFC Energy is anticipating strongly negative demand in 2009...**
- **...and probably further demand destruction in 2010**
- **The rebound, post-2011 will be driven mainly by emerging markets**

**OPEC has managed to sustain oil prices through good discipline
If demand does not drop too far, too long,
oil prices should remain buoyant**



Evolution of spare capacity going forward is highly uncertain:

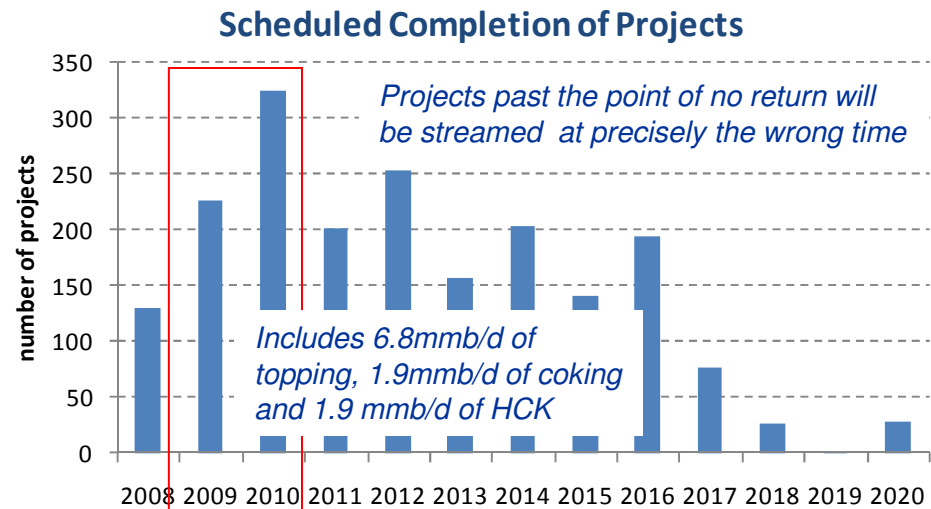
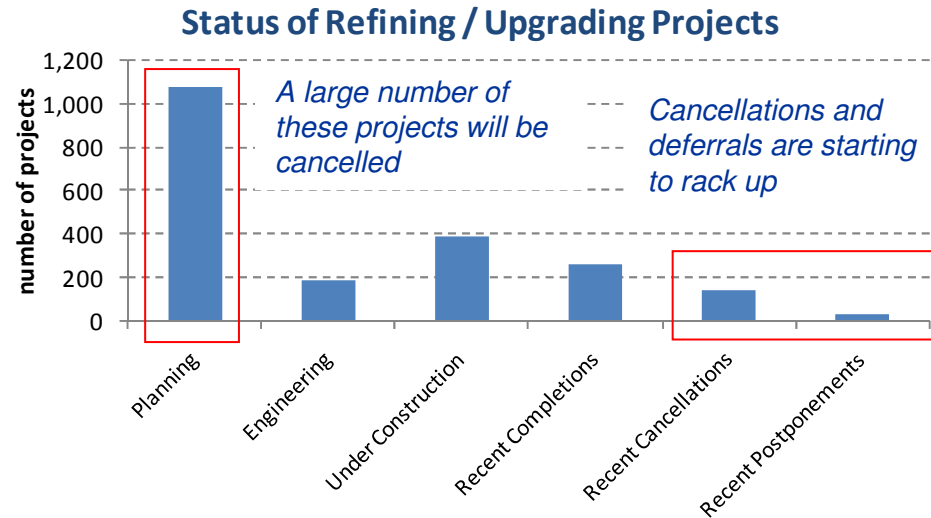
- Depth of demand collapse
- Recovery time
- Extent of supply development delays and cancellations



Global Investment Cycle: Example of Refining



- High crude prices and bullish a demand outlook have encouraged investment in recent years
- Many projects are still in the early planning stages...
- ...and are candidates for cancellation or deferral, numbers of which are starting to rack up
- However, a significant number of projects are well advanced and will be difficult to cancel
- This means that an increasing number of projects will be streamed in 2009 and 2010 as demand declines...
- ...and investment costs are set to remain high as service company clear backlogs



NB: Project refers to a single process unit. Therefore a Grassroots refinery consists of multiple projects

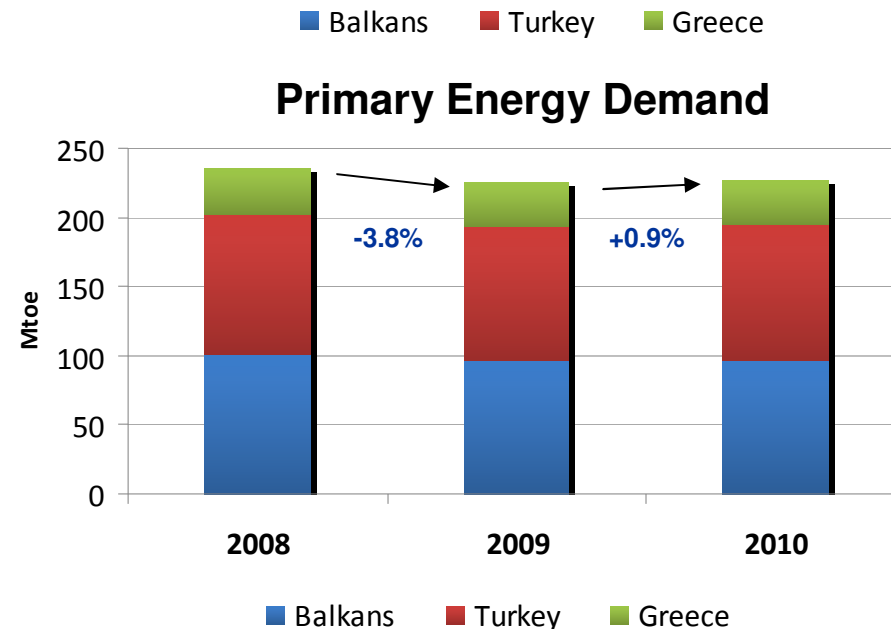
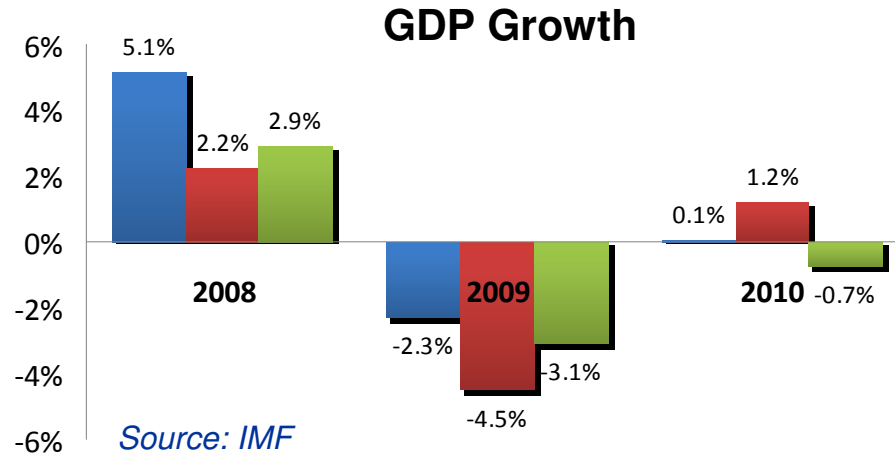
Crisis Impacting SEE in Short Term

- Significant economic contraction expected across the region in 2009

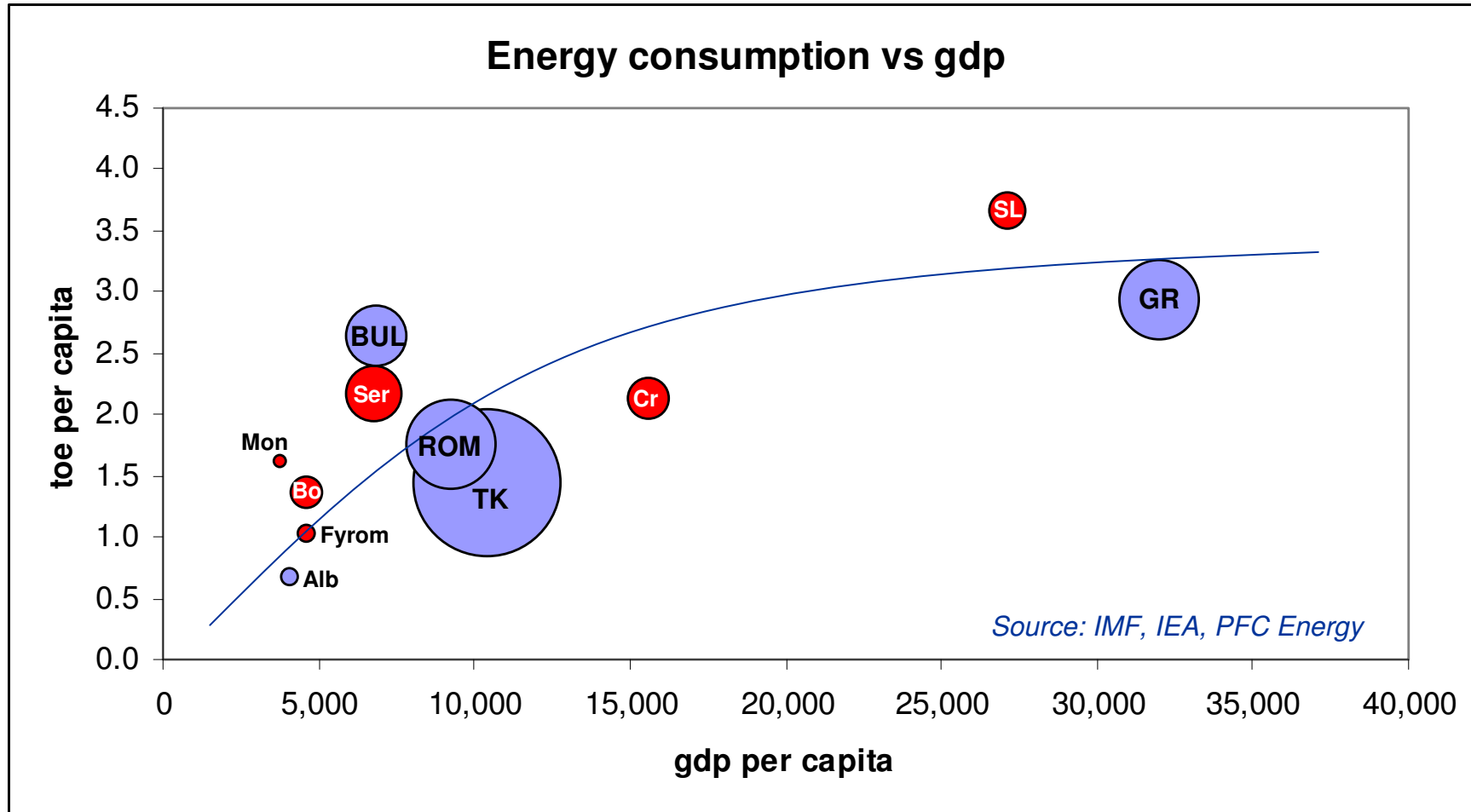
- Only mild recovery expected next year

- Knock on effect on energy demand significant

- Highly negative elasticity due to dramatic contraction in manufacturing
- Mild rebound expected in 2010
- Have to wait for 2011-12 to get back to 2007-8 levels

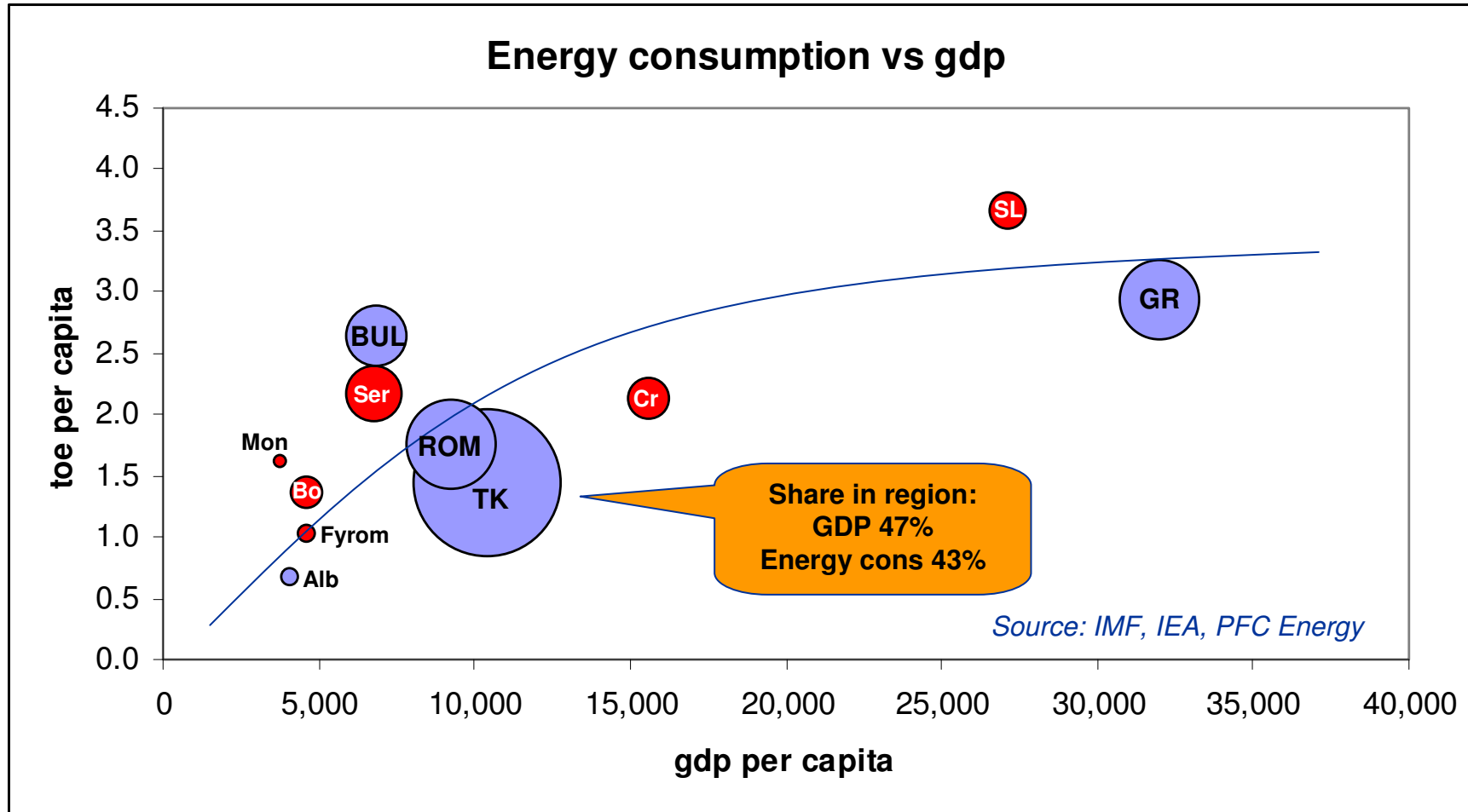


Regional Energy Consumption 2008



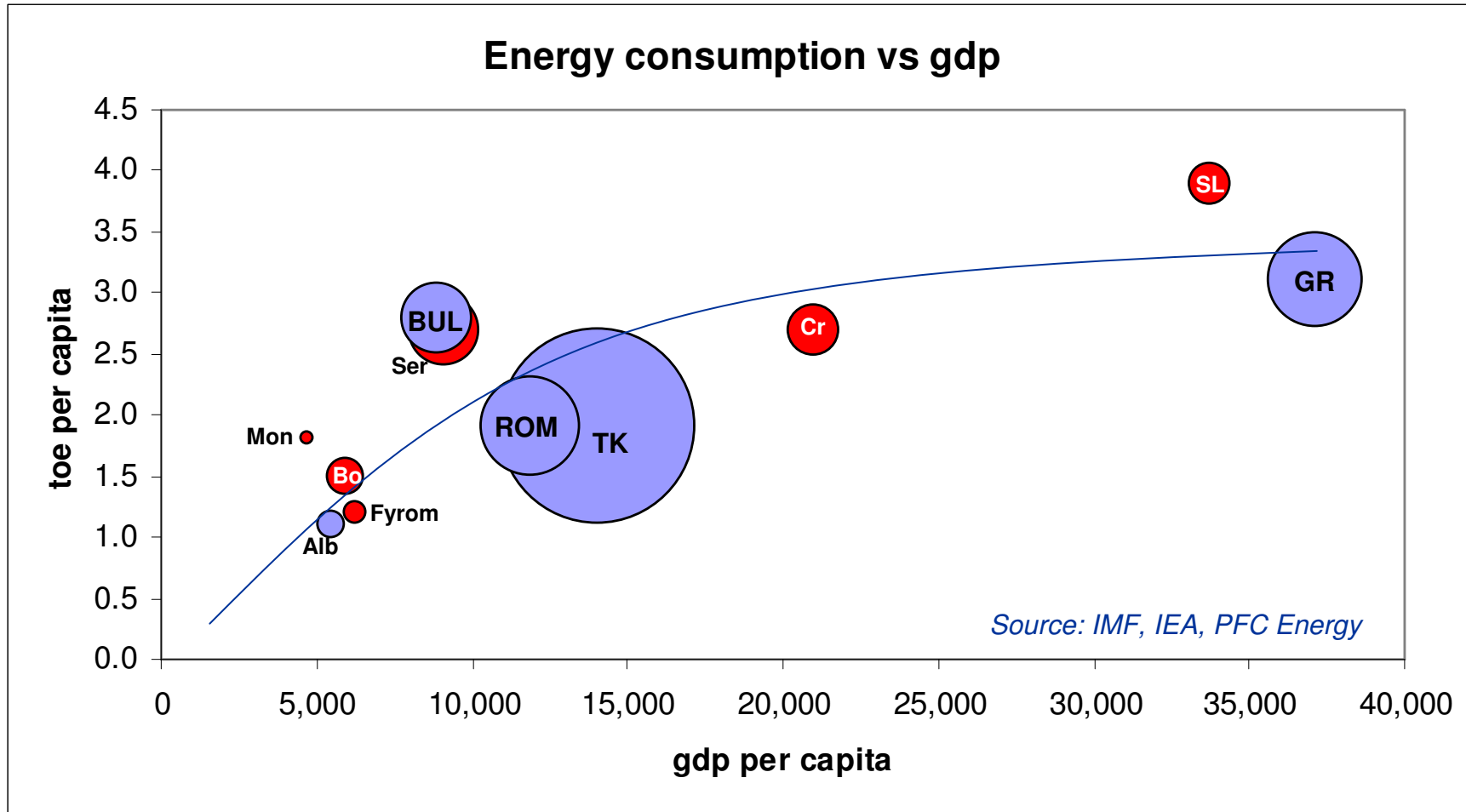
Significant energy growth potential
However, some countries also have significant efficiency gain potential

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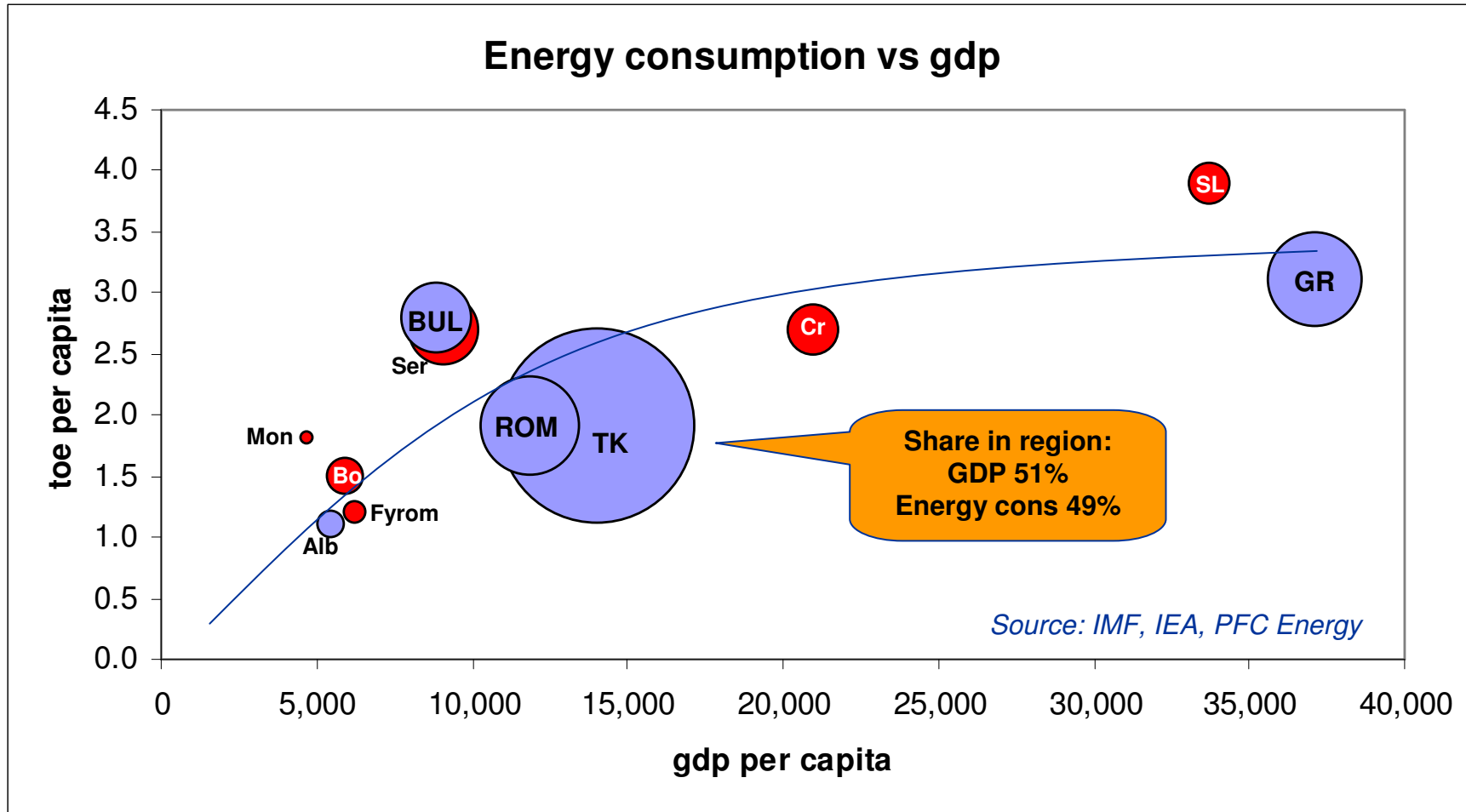
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Regional Energy Consumption 2020



Regional economy to grow 40% from 2008 base
Energy demand to grow 30% from 2008 base
Turkey to provide over 70% of incremental demand

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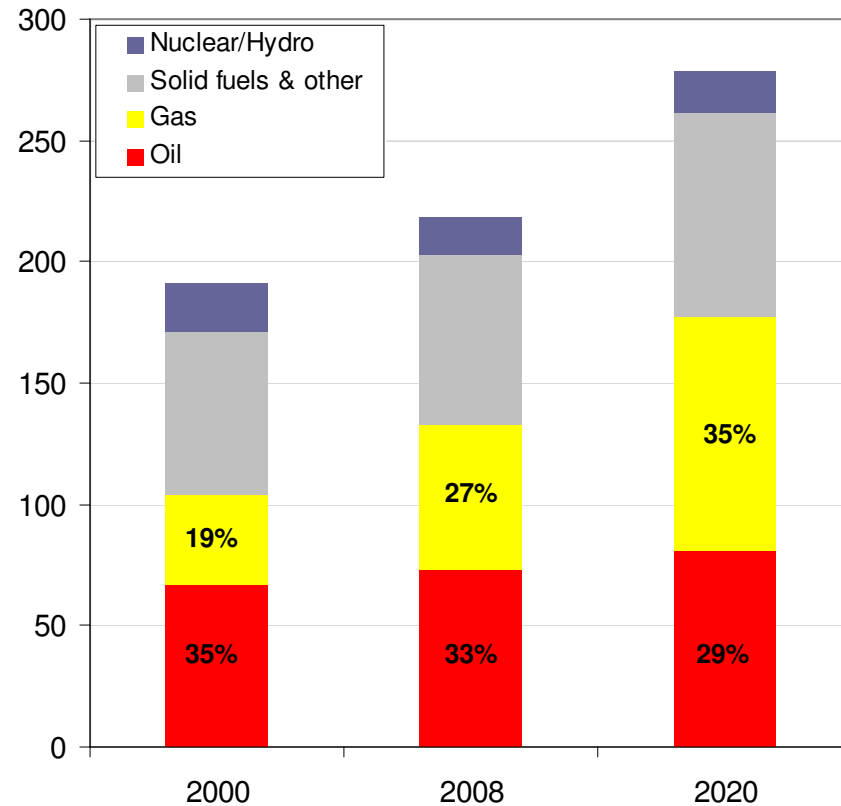


Regional economy to grow 40% from 2008 base
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Energy Mix Will Continue to Shift to Gas

- **Share of oil (33%) in energy mix should see continued decline**
- **Natural gas (27%) should take lion's share of incremental growth**
 - However, growth is dependent on external sources and advancement of various projects
- **Other sources:**
 - Nuclear long lead time will mean it will play limited role in meeting incremental growth in next 10 years
 - Potential restart of Kozloduv problematic
 - Hydro new projects insufficient to maintain share
 - Coal is well suited to region's low cost structure...but emissions will be a problem, as elsewhere
 - Significant lag in Renewables, but share will grow very significantly from current low base and will more than offset decline of traditional solid fuels

SEE Primary Energy Mix



Source: Country Statistical offices, IEA, PFC Energy

Major Infrastructure Projects



Oil & Gas

- **E&P**
 - Exploration in Cyprus, Turkey
 - EOR in mature fields (eg Albania)
- **Refining**
 - Upgrades Tupras, Hellenic, LUKoil, INA, etc
 - Greenfield in Ceyhan, others?
- **Oil pipelines**
 - Burgas-Alexandroupolis
 - PEOB
 - Druzhba-Adria
- **Gas pipelines**
 - South Stream
 - Nabucco
 - ITGI
 - TAP
 - ECCGR
 - Bilateral links
- **LNG**
 - Regas terminals (Greece, Adriatic, Cyprus)
- **Gas storage**
 - Albania

Other Energy

- **Nuclear**
 - Akuyu
 - Belene
- **Hydro**
 - SE Anatolia
 - Albania
- **Coal**
 - Greece hesitant about more coal
- **Renewables**
 - Wind, Solar, mainly in Greece
 - Biofuels
 - Significant production potential in Turkey
 - Lots of potential small projects across Balkans

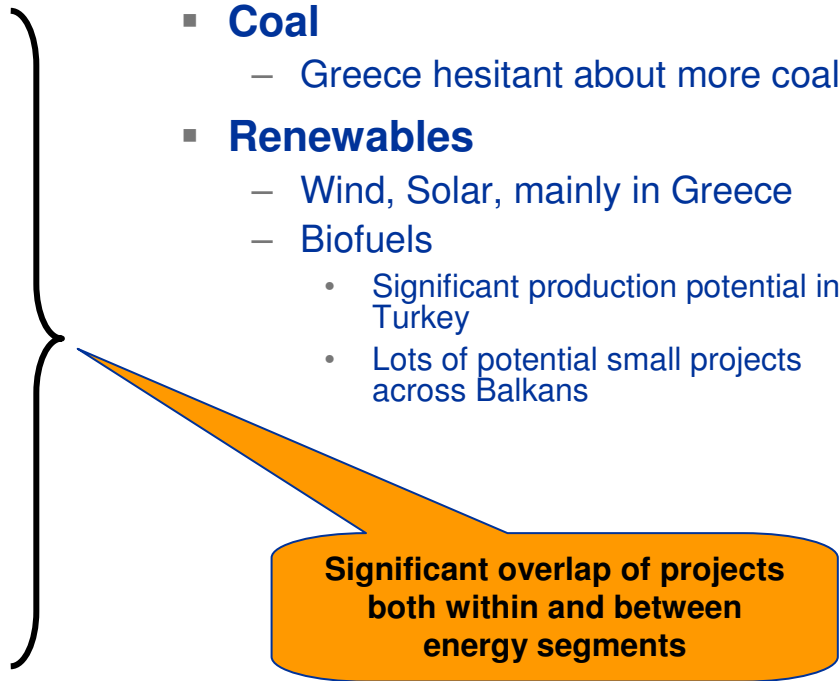
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- **Electricity**

- Impact of low prices on infrastructure development, notably gas
- Lack of integration in regional market raises costs further for investors
- Relations with governments not always easy (EVN in FYR of Macedonia)

- **Biofuels**

- Currently lagging far behind EU targets
- However, region will ultimately converge (typical 3 to 5 year lag to EU)

- **Downstream oil competition regulation**

- Region moving towards more open and competitive structures
- EU membership or prospect facilitates normalization of these markets
- But still issues of political risk, regulatory uncertainty, and organized crime

Conclusions

- **Unsustainability of previous global growth model**

- **Transition to more balanced growth model will be difficult and painful**
 - High cost to OECD economies
 - Crisis will accelerate transition of economic power to emerging Asia

- **SEE is affected in several ways**
 - Short run sharp knock-on effect of contraction in trade and investments
 - Medium run, could find EU funding difficult as EU enters fiscal austerity
 - EU enlargement delays

An orange callout box with a black border and a tail pointing towards the top-left. It contains text about the long-run cost of a crisis.

**Long run « cost » of
crisis in range of 10%
to 20% of demand by
2020**

Conclusions

- **Unsustainability of previous global growth model**
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- **SEE is affected in several ways**
 - Short run sharp knock-on effect of contraction in trade and investments
 - Medium run, could find EU funding difficult as EU enters fiscal austerity
 - EU enlargement delays
- **Significant energy infrastructure investments still required to support growth**
 - Turkey is the prize in terms of consumer market – will receive bulk of investments across value chain
 - Balkans is essentially seen as transit region – investments very focused on midstream
 - Better political and economic integration is critical to Balkans



Strategic Advisors in Global Energy

PFC Energy consultants are present in the following locations:

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- ▶ Buenos Aires
- ▶ Calgary
- ▶ **Houston**
- ▶ **Kuala Lumpur**
- ▶ **Lausanne**
- ▶ London
- ▶ Mumbai
- ▶ New York
- ▶ **Paris**
- ▶ San Francisco
- ▶ **Washington, D.C.**

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