World Energy Demand Growing!

Non-OECD countries account for vast majority of the nearly 50% projected increase in global energy use by 2035

Energy consumption in quadrillion Btu

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-OECD</th>
<th>OECD w/o U.S.</th>
<th>U.S.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>495</td>
<td>245</td>
<td>150</td>
<td>890</td>
</tr>
<tr>
<td>2015</td>
<td>543</td>
<td>271</td>
<td>172</td>
<td>986</td>
</tr>
<tr>
<td>2020</td>
<td>590</td>
<td>305</td>
<td>185</td>
<td>1080</td>
</tr>
<tr>
<td>2025</td>
<td>639</td>
<td>344</td>
<td>195</td>
<td>1178</td>
</tr>
<tr>
<td>2030</td>
<td>687</td>
<td>385</td>
<td>216</td>
<td>1288</td>
</tr>
<tr>
<td>2035</td>
<td>739</td>
<td>429</td>
<td>251</td>
<td>1419</td>
</tr>
</tbody>
</table>

Source: EIA, International Energy Outlook 2010
US Supply 2035 - still 78% Fossil Fuels

Source: EIA, Annual Energy Outlook 2011
# U.S. Oil Consumption & Supply

<table>
<thead>
<tr>
<th>U.S. OIL DEMAND</th>
<th>Million Barrels/Day</th>
<th>Trillion Gallons/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Gasoline</td>
<td>9.5</td>
<td>146</td>
</tr>
<tr>
<td>U.S. Distillate &amp; Fuel Oil</td>
<td>4</td>
<td>61</td>
</tr>
<tr>
<td>U.S. Jet Fuel &amp; Kerosine</td>
<td>1.4</td>
<td>21</td>
</tr>
<tr>
<td>U.S. Residual &amp; Bunker</td>
<td>0.6</td>
<td>9</td>
</tr>
<tr>
<td>U.S. Others - Chem, Lubes, etc.</td>
<td>4.5</td>
<td>69</td>
</tr>
<tr>
<td><strong>Total U.S. Oil Demand</strong></td>
<td><strong>20</strong></td>
<td><strong>307</strong></td>
</tr>
</tbody>
</table>

| Total World Oil Demand              | 86                  | 1,318                 |

<table>
<thead>
<tr>
<th>U.S. OIL SUPPLY</th>
<th>Million Barrels/Day</th>
<th>Trillion Gallons/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Gulf Offshore Oil Production</td>
<td>1.5</td>
<td>23</td>
</tr>
<tr>
<td>U.S. Non-Gulf Oil &amp; NGL Prod.</td>
<td>6</td>
<td>92</td>
</tr>
<tr>
<td>Gulf Coast Tanker Crude Imports</td>
<td>5</td>
<td>77</td>
</tr>
<tr>
<td>East Coast Tanker Crude Imports</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>West Coast Tanker Crude Imports</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Refined Tanker &amp; Pipeline Imports</td>
<td>2.3</td>
<td>35</td>
</tr>
<tr>
<td>N.A. Imports</td>
<td>1.5</td>
<td>23</td>
</tr>
<tr>
<td>Other supply</td>
<td>1.7</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total U.S. Oil Supply</strong></td>
<td><strong>20</strong></td>
<td><strong>307</strong></td>
</tr>
</tbody>
</table>

Source: EIA website
About 50+ Tankers in US Gulf of Mexico offloading 250 million gallons every single day

(Marinetraffic.com)
Gulf Coast Daily Tanker Oil Imports to Refineries

Total = 6 million bbls/day

Gulf Coast Crude Oil Imports Nov. 2007 (per Vessel Trax)
25+ WW II Tankers Sunk by U-Boats
1.5+ Million Barrels spilled in Summer (90+ days) of 1942

(from “Torpedoes in the Gulf”, 1995)
Gulf of Mexico Oil & Gas Fields

Source: ESA
Offshore Gulf of Mexico Oil & Gas

Historical Production

14+ Billion Bbls Oil and 150+ Trillion cu-ft Natural Gas
(1.7 Trillion gallons of oil equivalent)

Productive Fields’ Remaining Producible Reserves

14+ Billion Bbls Oil and 60+ Trillion cu-ft Natural Gas
(1 Trillion gallons of oil equivalent)

Undiscovered Oil & Gas (BOEMRE Mean Estimate)

45+ Billion Bbls Oil AND 230+ Trillion cu-ft Natural Gas
(3.5 trillion gallons of oil equivalent)

***************************************

25% of US Daily Oil Production – 14% of US Daily Gas Production

Source: BOEMRE website
Oil & Gas Activity in GOM

100+ Offshore Operators – 500+ Offshore Companies

50,000+ Direct Offshore Workers

1 million+ impacted by offshore

60+ Years of Drilling & Production

55,000+ wells drilled to date

4,000+ deepwater (500’+ water depth) wells

400+ ultra-deepwater (5,000’+ water depth) wells

Source: BOEMRE, OOSA, & others
Only 50 Movible Offshore Drilling Units (MODU) working in the GOM in Fall 2011

Drillship

Semi-submersible

Jackup

Platform Rig
Platforms & Caissons

2,500+ Fixed Leg Platforms – 1,000+ Single Well Caissons

HI-A-389 – in FGBNMS
Platform Installation & Removals by Year

“Idle Iron Platforms” or Useful Long-term Reefs?

(BOEMRE - M.S. Falk – OOC RTR Conf - Nov. 2010)
Oil Production 1993 - 2018

Source: BOEMRE 2010 Herbst
Gas Production 1993 - 2018

Source: BOEMRE 2010 Herbst
Oil Production – Shelf vs. Deepwater

Source: BOEMRE 2010 Herbst
Gas Production – Shelf vs. Deepwater

Source: BOEMRE 2010 Herbst
6,269 Active Federal Leases – 33.6 million acres leased

(per BOEMRE website Nov 2011)
Active Leases by Water Depth

Source: BOEMRE 2008 Deepwater
Leases by Water Depth - 1995 vs. 2009

Number of Leases by Water Depth

<table>
<thead>
<tr>
<th>Water Depth (meters)</th>
<th>1995</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 200</td>
<td>3,624</td>
<td>2,579</td>
</tr>
<tr>
<td>200 - 400</td>
<td>184</td>
<td>169</td>
</tr>
<tr>
<td>400 - 800</td>
<td>440</td>
<td>354</td>
</tr>
<tr>
<td>&gt;800</td>
<td>1,012</td>
<td></td>
</tr>
</tbody>
</table>

Source: BOEMRE 2010 Herbst
Eastern Gulf of Mexico Exploratory Wells and Seismic Data

Source: BOEMRE 2008

[Map showing exploratory wells and seismic data in the Eastern Gulf of Mexico Planning Area.]
Salt Provinces in Northern Gulf of Mexico
Subsalt vs. Presalt

Graphic: Mike Hudec, Bureau of Economic Geology, The University of Texas at Austin;
Annotation: Clint Moore, ION Geophysical Corporation
Subsalt Deep Drilling Grows in GOM

Source: McMoran IR
U.S. Gulf of Mexico Subsalt Discoveries
Bank Salt Domes connected to Big Salt Sheets

(adapted from Moore & Brooks, 1995)
Large GOM Natural Oil Seeps – 1910 Article
38 Years before 1st offshore GOM well
Natural Oil Seeps (Green) from Satellite Data are estimated from 2,000 – 10,000+ BOPD
Large GOM Natural Oil Seeps - Photo

Satellite image of natural oil seeps in the Gulf of Mexico by Jesse Allen, NASA. See zoomed-in below.


(from NASA Earth Observatory news release from February 3, 2009 per Geology.com)
Deep Miocene Play

Source: BOEMRE 2000 Assessment
Deep Lower Tertiary Play

Source: BOEMRE 2009 Production Report
Lower Cretaceous Carbonate Shelf Margin Play

Source: BOEMRE 2000 Assessment
Lower Cretaceous Sunniland Carbonate Oil Play

Source: BOEMRE 2000 Assessment
Upper Jurassic Norphlet Gas Sand Play

Source: BOEMRE 2000 Assessment
Florida’s Future Main Gas Supply
Now is from Jurassic-Norphlet off Alabama
Will need same JN Gas off Florida Panhandle

Eastern Gulf of Mexico OCS Area
Undiscovered Oil and Gas Resources

Oil
- Billion Barrels of Oil
  - Econ Rec ($110/bbl)
  - Tech Rec

Gas
- Trillion Cubic Feet of Gas
  - Econ Rec ($11.74/Mcf)
  - Tech Rec

Oil Resources:
2.8 – 5.5 billion barrels

Gas Resources:
18 – 26 Trillion Cubic Feet

Source: BOEMRE 2010 Salazar
Florida Oil & Gas
Consumption & Supply

3rd Biggest Oil Consuming State
900,000 barrels per day
1.3 billion gallons per year

6th Biggest Natural Gas Consuming State
2.5 BCF per day
942 BCF per year

Gulfstream 36” Pipeline – Mobile-Tampa – 1.26 BCF per day

Florida produces less than 1% of its daily consumption

U.S. Total Gas Demand
63 BCF per day
23,000 BCF per year

Source: IPAA website
America’s Future Offshore Oil & Gas?  
Gulf of Mexico is #1  
Alaska is #2