



## Norway Invests in the Future's Biggest Climate Threats<sup>1</sup>

By: Sigurd Jorde, *Future in Our Hands*, 2013

*Despite the climate threat, large scale projects of extracting coal, oil and gas are realized across the planet. Fossil energy is the main cause of climate change, but there is no sign of reduction in production of . The Norwegian Government Pension Fund – Global and Statoil have invested heavily in the 14 biggest new carbon projects, which will make it impossible to reduce the climate changes in time.*

The world's leaders have promised to stop climate change; nevertheless a rapid growth in the extraction of carbon resources such as coal, oil and gas is being planned all over the world. There exist no effective international climate change agreements to slow the emission of climate gases. Carbon quotas have limited effectiveness. There is nothing to prevent the world's coal and oil companies from expanding their production. Altogether, this constitutes the world's probably biggest climate threat.

Without effective climate measures there will thus be increased production of coal, oil and gas – fossil resources that will lead to increased climate gas emissions.<sup>1</sup> All over the world new areas are being opened for extraction, and as yet untouched coal and oil fields are being put into operation. These new extraction projects are to supply us with new fossil energy for several decades. The consequence is an extension of our dependence on fossil energy – and that we will not be able to reduce the climate changes.

An investigation by *The Future in Our Hands* shows that the Government Pension Fund – Global and Statoil have invested in 14 of the biggest new extraction projects at present being developed all over world. The projects will contribute to continued growth in climate carbon dioxide emissions and a development heading towards a temperature increase of 5-6°C. The projects are broadly defined but are characterized by entailing new and increased production compared with what we have today. Our investigation shows that the Pension Fund has invested heavily in all of these projects. Broken down to company level, we have defined 107 oil and coal companies that are about to increase their production, thereby endangering the climate goals. Altogether the Pension Fund has invested 219 billion Norwegian kroners in these companies, equivalent to 36 billion US dollars.

In 78 of the 107 companies the Fund has bought more shares in 2012, and the value has increased by 1.2 billion kroner (200 million dollars) from 2011 to 2012. The increase is relatively low, because the Fund's oil portfolio showed little growth in 2012.

The Fund's growth in this field is occurring even though climate considerations are supposed to be one of the Fund's commitment areas.

### **The biggest carbon threats to the world's climate**

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<sup>1</sup> This is an English translation of the brief [«Norges investeringer i verdens største klimatrusler»](#)



## Statoil – Present Where It's Happening

Statoil is an international oil company with high ambitions, and we have found it to be present in almost all the projects we analyzed in this investigation. About half of Statoil's exploration activity is now carried out abroad, and Statoil has operations or offices in 35 countries, with production in 11 countries and exploration licenses in 15. The company has a clear strategy to grow abroad – by, among other things, unconventional production such as tar sand and shale gas. In our examination in the next pages Statoil has turned up in country after country, and in the most controversial fields, such as tar sand in Canada and Venezuela.<sup>2</sup> Ten of the 14 projects we discuss concern extraction of oil and gas: Statoil is involved in 9 of 10. The only exception is Iraq, from which Statoil only recently withdrew.

The Norwegian government is majority owner of Statoil and sets the guidelines for the Pension Fund. The government is in reality gambling that the global 2°C goal, which Norway supports, will come to nothing. There is broad political agreement, both in Norway and internationally, that the global temperature increase must be kept at less than 2°C. Both the government and the opposition Conservative Party have stated that it is primarily the world's coal production that has to be reduced if we are to save the climate. But The Future in Our Hands' examination shows that the Pension Fund also owns shares in companies that are increasing coal production. There is a great gap between the government's climate promises and what it does in reality.

## From Oil in the Arctic to Chinese Coal

The coal companies will satisfy the increasing demand for energy with big new coal projects in China, Australia, Indonesia and the USA. The oil companies, for their part, are involved in a series of big new oil and gas projects in Iraq, in Arctic areas, offshore Africa and in the Caspian Sea and in deep oil fields offshore Brazil and the Gulf of Mexico. Enormous unused carbon resources are also to be found in shale gas in the USA and in tar sand in Canada and Venezuela.

## Extract All We Own

In a previous investigation The Future in Our Hands showed that the Pension Fund owns shares in the world's biggest oil and coal companies, which in turn own more carbon than we can extract and burn without breaking the climate goals. Only between 25% and 30% of the world's known carbon reserves – in the form of coal, oil and gas – can be extracted and burned before there is serious danger of the climate changes becoming dramatic<sup>3</sup> and self-enforcing.<sup>4</sup>

But the companies are not interested in just leaving coal and oil lying in the ground, as a worthless reserve. The world's appetite for energy is great. Without effective policies or mechanisms for replacing fossil oil, gas and coal, all known reserves will be extracted and burned.

The 14 biggest areas and projects in this investigation are those that will contribute most climate gases on burning. Altogether these projects will cause 300 billion tons of CO<sub>2</sub> over the coming decades and make it close to impossible to limit CO<sub>2</sub> emissions in time to reduce the climate changes before they spiral out of control. The projects are divided among coal, oil and gas, and are taking place across large parts of the world.

## No Interest in Climate

The Future in Our Hands has examined every single project to identify the companies involved, and the Norwegian interests behind them. The projects in this investigation are based on the International Energy Agency (IEA)'s survey of the world's energy future ("World Energy Outlook"). The environmental research organization Ecofys has then analyzed the expected CO<sub>2</sub> emissions from these projects in Greenpeace's report "Point of No Return", which ascertains the following:

"In 2020, the emissions from these 14 projects (...) – if they all were to go ahead – would raise global CO<sub>2</sub> emissions from fossil fuels by 20% and keep the world on the path towards 5°C to 6°C of warming."<sup>5</sup>



The report "Point of No Return" does not provide a good survey of which companies are involved in rapid growth in the extraction of more fossil energy. The companies themselves, and their shareholders, have invested large amounts in increasing the production of coal, oil and gas. Our survey reveals that all the biggest oil and coal companies are involved in this extension of our dependence on fossil energy. In addition, we found a series of companies that are less known in Norway. Altogether we have identified 107 companies in which the Pension Fund has invested more than 219 billion kroner (36 million dollars). The list of companies is not complete; if we include subsuppliers and participants who have not yet drawn notice to themselves, the number of companies will probably be double as high.<sup>6</sup>

### Unprofitable Investments?

The investment strategy of the Government Pension Fund – Global is to invest broadly in many companies. The Ministry of Finance has prepared a reference index with regard to which countries and sectors the Fund should invest in. In 2012, 9.8% of the portfolio was invested in oil and gas. Even though the oil sector gave a relatively low return (0.4% in 2012), the Fund increased its ownership share in a great number of the oil companies in the course of the year. The total investments in oil and gas constituted 229 billion kroner in 2012.<sup>7</sup>

It is more difficult to identify the coal companies in the Fund's portfolio. They are grouped together with other companies within mining, minerals, chemicals and raw materials in the category "Basic minerals". All of this sector constituted 7.5% of the portfolio and gave a 13.2% return.

The Fund has an environmental program, «environmentally aimed investments». In comparison, only 26 billion kroner (above 4 billion dollars) has been invested in this, and the Fund discloses only 10 of the companies in which it has invested. The Pension Fund has as a goal to be an investor with a long-term perspective. The challenge for The Ministry of Finance and the Pension Fund is that the climate changes demand that large parts of the known carbon resources must remain in the ground if we are to stop the climate changes.

The Future in Our Hands has previously calculated how much the Pension Fund has invested in companies that own more gas, oil and coal than what may safely be extracted.<sup>8</sup> The Pension Fund has invested 186 billion kroner in the 86 biggest oil companies and 44 billion kroner in the 60 biggest coal companies. The calculation is based on those made by the IEA and Carbon Tracker Initiative, which show that up to 80% of the world's carbon resources must remain in the ground.<sup>9</sup> The investments thus constitute a great financial risk for the companies themselves, and for the Pension Fund, which has invested large sums so that the companies may sell their carbon resources.

In the following pages we shall see that these resources constitute not only theoretical values but also something that the companies with high speed are extracting and selling on the international market. This is in accordance with the companies' aim and competence, as they have promised shareholders such as the Pension Fund.

In other words, our calculations show that companies in which the Pension Fund has invested actively mobilize all their resources, competence and capital to extract fossil resources – and thus in practice counteract the government's goal of limiting the global temperature rise to 2°C. The Pension Fund's managers are directed to take climate considerations with regard to the Fund's investments. But even if the Fund does so in some limited fields, it is often suppressed by the massive investment in the fossil carbon that is now being extracted and will be burned.

### Methods for the Investigation

In the following survey we have investigated which stock exchange-listed companies are leading in the 14 different projects for increased or new extraction of coal, oil and gas. The information is not easily accessible and has required independent research for each of the 14 projects to obtain a relevant survey of which companies are involved in production or exploration. The largest international oil companies are present in several of the projects. A table at the end of the investigation shows which companies appear in several projects. The companies have been selected on the basis of what we found in open searches. In all the projects there exist collaborators and subsuppliers who contribute to make the extraction possible. It is challenging to evaluate the role of each of these companies, and several relevant companies have therefore been omitted from this survey. *Please inform us if you know of any companies that should be on the list.*



As mentioned, the selection of the 14 projects is borrowed from the report "Point of No Return", which calculates the future rise in CO<sub>2</sub> emissions from each project. The report has, in turn, borrowed its selection from the IEA's report "World Energy Outlook" and its analysis of which regions and projects will supply the world with energy during the coming decades.

A premise for our report is that all extracted carbon resources will be burned and contribute to climate changes. There are at present no international climate initiatives that will reduce our consumption of coal, oil and gas effectively and thus reduce the planned extraction. So-called carbon storage would be one possibility for burning fossil carbon without climate damage, but this does not exist in a scale or quality that can guarantee that the extraction presented here is safe.



## The World's Biggest Climate Threats

### 1. China's Growth in Production and Use of Coal

China is the world's biggest producer and consumer of coal. Coal is responsible for 70% of the country's energy supply.<sup>10</sup> A planned 20% expansion of China's coal production will, according to the report "Point of No Return", be the world's biggest contribution to more CO<sub>2</sub> emission during the coming years. New mines, coal power plants and factories in China's western and northern provinces will give emissions double as large as all of Germany's in 2010: 1400 million tons CO<sub>2</sub> yearly.

Many of China's biggest coal companies are government owned, but there are also several stock exchange-listed subsidiaries and independent coal producers which contribute to increase China's coal production. The Pension Fund has invested in China Huaneng Group and Shenhua Group Corp., which are leading in the expansion of coal production north and west in the country. China has a formidable growth in renewable energy; nevertheless the Pension fund has invested in six other Chinese coal companies which contribute to maintain China's enormous coal production and makes China the world's next largest emission nation. There exists little information about the companies involved in China's coal expansion. In this survey we include all the Chinese coal companies in the Pension Fund which we have found.

Pension Fund's investments in China's coal production	Amount invested <sup>11</sup>	Ownership share	Growth/reduction in amount invested	Change in ownership share
China Shenhua Energy Co Ltd*	350 179 892	0.07%	-52 710 085	-11%
Huaneng Power International*	158 619 864	0.18%	155 162 142	3650%
Shanxi Coal International Energy Group Co Ltd	13 444 537	0.07%	10 462 245	438%
China Coal Energy Co Ltd	93 918 635	0.12%	-257 229 487	-70%
Jizhong Energy Resources Co Ltd	15 986 559	0.06%	12 101 784	471%
Inner Mongolia Yitai Coal Co Ltd	274 548 678	0.52%	274 548 678	
Inner Mongolia Pingzhuang Energy Co Ltd	11 249 346	0.13%	9 807 821	797%
Anhui Hengyuan Coal-Electricity Group Co Ltd	6 539 379	0.06%	4 144 719	216%
*Subsidiary of Shenhua Group				
** Subsidiary of China Huaneng Group				

Sources: China Shenhua and Huangeng<sup>12</sup>, Jizhong and China Coal<sup>13</sup>, Shanxi<sup>14</sup>, Inner Mongolia and Anhui<sup>15</sup>.

### 2. Australia Goes in for More Coal from Queensland

Australia is, after Indonesia, the world's biggest exporter of coal. The country is now planning to double its export in the course of the next 10 years. A series of Australian and international mining companies are involved in 49 new mines in the states of Queensland and New South Wales. Altogether the new coal resources from these mines will lead to emissions of 760 million tons of CO<sub>2</sub> – corresponding to Germany's emission as of today. In the long term, this will increase to 1200 million tons of CO<sub>2</sub>, the same as Japan's.<sup>16 17</sup>

Among the most active companies in this coal race are the big international coal companies Xstrata, BHP Billiton, Peabody, Anglo American, Vale and Yancoal. The Pension Fund has also invested in a series of Australian coal companies with coal mines and projects that will increase production: AGL Energy, Cockatoo Coal, Wesfarmers Resources, New Hope Corporation, and Linc Energy.<sup>18</sup>



Pension Fund's investments in coal from Queensland, Australia	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
Xstrata PLC	8 373 364 539	2.91%	3 970 851 540	78%
BHP Billiton Ltd	5 005 313 661	0.44%	2 782 552 518	123%
Peabody Energy Corp	131 173 500	0.33%	-265 937 301	-56%
Anglo American PLC	5 627 767 248	2.36%	-1 711 013 675	-6%
Vale SA	4 240 063 024	0.70%	731 383 300	32%
Yancoal Australia Ltd	102 671 653	1.19%	102 671 653	New
AGL Energy Ltd	417 085 825	0.85%	157 389 707	32%
Cockatoo Coal Ltd	3 960 941	0.59%	-9 716 342	1%
Wesfarmers Resources Limited	2 173 129 994	0.88%	825 972 070	37%
New Hope Corporation Limited	43 386 368	0.21%	-9 404 956	12%
Linc Energy Ltd	21 516 956	0.62%	6 760 216	43%

Source: "Point of No Return" and Geological Survey of Queensland Department of Natural Resources and Mines<sup>19</sup>.

### 3. Race for Oil and Gas in the Arctic

The areas around the North Pole are in the process of being opened for oil exploration and oil extraction. There is still an active diplomatic game among the countries that border on the Arctic in order to secure the area for new oil production. In areas where the borders have already been determined, several countries have now started exploration and extraction.

Norway and Russia are at the forefront in the race. In the last allotment round 37 companies received licenses for production and exploration activity in the Barents Sea. Russia has for a long time tried to develop its large gas field Shtokman and is negotiating with international oil companies about increased exploration activity in the Arctic.<sup>20</sup> During the past 2 years oil companies have explored for oil offshore Greenland, Canada and the USA (Alaska), so far without much luck.

Norway's Statoil is one of the leading companies in the Arctic, strongly present in the Barents Sea, an insecure position in Shtokman and concession for 14 blocks offshore Alaska.<sup>21</sup> Statoil has an exploration license for offshore Greenland together with Cairn Energy<sup>22</sup> and was previously actively involved with Gazprom about development of the big Russian gas field Shtokman. As late as in April of 2013 activists demonstrated in Moscow against Statoil's collaboration agreement with Russia's Rosneft for oil exploration in the Arctic.

Oil extraction in the Arctic has a special paradoxical dispute, inasmuch as the temperature rise makes the Arctic more accessible for oil production. Even though it is difficult to operate in the areas around the North Pole because of the cold and ice, a large number of international oil companies are participating in the search for Arctic oil:

In Norway's Barents Sea 11 companies have been allotted operator rights for oil blocks through the government's concession rounds (19th, 20th and 21st): BG, ConocoPhillips, Eni, GDF SUEZ, Lundin, Marathon Petroleum, OMV, Total, Statoil, DONG, and Wintershall. The Pension Fund has invested in the first seven of these, whereas Folketrygdfondet has invested in Statoil and DONG.

Several well-known companies have exploration licenses offshore Greenland: Cairn Energy, ExxonMobil, Chevron, DONG Energy, Husky, ConocoPhillips, GDF Suez, Petronas, PA Resources and Statoil. The Pension Fund has invested in all of these, with the exception of DONG and Statoil, in which Folketrygdfondet has also invested.

Canada and Alaska (USA): Shell, ConocoPhillips and Statoil are leading in the oil exploration offshore Canada. Shell has taken a break because of problems but is expected to return.<sup>23</sup>

In Russia it is the government companies Rosneft and Gazprom that are leading the exploration for oil and gas. They have entered into collaboration with several international oil companies, such as Eni, ExxonMobil, Shell and Statoil.



Pension Fund's investments in the race for oil and gas in the Arctic	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
BG Group Plc	13 771 455 652	4.42%	3 794 168 057	92%
Cairn Energy	453 650 153	3.14%	-292 413 181	46%
Chevron Corp	9 164 645 697	0.78%	862 426 697	19%
ConocoPhillips	2 781 353 372	0.71%	-896 254 935	11%
Eni SpA	9 137 718 200	1.87%	1 611 738 209	23%
ExxonMobil Corp	16 154 269 286	0.74%	-746 775 025	6%
Gazprom OAO	5 668 269 158	0.91%	-510 127 679	11%
GDF Suez	4 764 395 445	1.73%	-2 010 377 188	-6%
Husky Energy Inc	372 338 640	0.23%	45 110 444	-3%
Lundin Petroleum	679 152 044	1.67%	-73 909 000	4%
Marathon Oil	853 070 069	0.71%	124 576 863	20%
OMV AG	623 688 863	0.95%	150 216 645	19%
PA Resources AB	2 892 989	2.65%	-29 296 557	-3%
Petronas	142 118 999	0.20%	79 319 598	6%
Rosneft OAO	1 834 632 630	0.35%	339 765 163	-1%
Royal Dutch Shell PLC	28 829 342 293	2.34%	-2 153 907 099	6%
Total SA	14 514 822 013	2.14%	145 263 098	8%

Sources: Russia<sup>24</sup>, Norway<sup>25</sup>, Greenland<sup>26</sup>

#### 4. Indonesia Increases Coal Production in Kalimantan

Indonesia is today the world's biggest coal exporter<sup>27</sup> and receives 60% of its electricity production from coal itself.<sup>28</sup> Indonesia's coal production has grown strongly since 1990 and then shot up in the 2000s, from 77 million tons yearly in 2000 to 325 million tons in 2011, for a growth rate of 20% yearly.<sup>29</sup>

Indonesia has no thoughts of giving up and has plans for a continued expansive growth in coal production, especially in Kalimantan, Indonesia's part of the island of Borneo.

The biggest coal companies involved in expansion of coal production in Kalimantan is, according to Greenpeace, Kaltim Prima Coal (KPC – Indonesia), PT Adaro (Indonesia), BHP Billiton (Australia) and Banpu (Thailand). The Pension Fund has invested in all of these, in KPC via the companies' two principal owners, PT Bumi Resources from Thailand<sup>30</sup> and Tata from India.<sup>31 32</sup>

The Pension Fund has also invested in other important coal companies that dominate the production in Indonesia: PT Arutmin (same owners as KPC), PT Kideco Jaya Agung, which is a subsidiary of Indika Energy (Indonesia), PHI Inc (USA), and Monnet Ispat & Energy (India).

Pension Fund's investments in companies that extract coal in Kalimantan, Indonesia	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
Adaro Energy Tbk PT	12 335 911	0.04%	12 335 911	New
Banpu Plc	64 004 341	0.31%	5 055 242	47%
Bumi Resources Tbk PT*	26 813 633	0.38%	-28 605 017	35%
Tata Power Co Ltd **	65 337 399	0.25%	-60 571 231	-54%
PHI Inc	19 329 306	0.68%	3 948 893	0%
Monnet Ispat & Energy	18 473 980	1.00%	-18 584 126	-29%

\* Majority owner of Kaltim Prima Coal and PT Arutmin  
 \*\* Minority owner of Kaltim Prima Coal and PT Arutmin

Sources: Jatams Deadly Coal<sup>33</sup> and Sourcewatch<sup>34</sup>



## 5. Canada's Tar Sand Production

Oil from tar sand – also called oil sand – is a controversial form of oil. First, there is a great deal of it, constituting a threat to the world's climate goals if all of it is extracted. Another concern is that the production process, in which the oil is released from sand tightly packed with oil, is extremely energy-intensive. In other words, large amounts of CO<sub>2</sub> are released from the extraction even before the oil is ready for sale. Furthermore, a lot of criticism has been directed at the water use, destruction of nature and pollution from the production.

The list of companies involved in Canada's oil sand is long: by comparing three different lists<sup>35 36 37</sup> of companies involved, we have found 80 that either extract oil sand or make money on oil sand through delivery, financing or other services. The Pension Fund has invested in 33 of these. In this survey we include only the most important producers, in addition to the oil freight company Enbridge, which is largest in the freight of oil from oil sand through Canada and the USA.

The most prominent companies in the biggest oil sand field in Alberta are Syncrude Canada Ltd, Suncor Energy and Albion Sands. Other important companies are ExxonMobil<sup>38</sup>, Nexen, Shell, Canadian Natural Resources Ltd, Total SA, and Imperial Oil.<sup>39</sup> Syncrude Canada is a joint venture company, owned by the oil companies Canadian Oil Sands Limited, Imperial Oil, Suncor Energy, Nexen, and Murphy Oil.<sup>40</sup> Albion Sands is, on the other hand, owned by Shell, Chevron, and Marathon Oil Corp.<sup>41</sup>

Statoil is an active participant in Canada's oil sand through its subsidiary North American Oil Sands Corporation and now produces oil at the trial plant in Leismer.<sup>42</sup> The company has oil sand concentrations on 1100 km<sup>2</sup>. Statoil's participation in the oil sand extraction has received strong criticism and has caused some funds to withdraw their investments in Statoil.<sup>43</sup>

Pension Fund's investments in Canada's oil sand	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
Canadian Natural Resources Ltd	1 367 729 439	0.78%	-533 617 576	0%
Canadian Oil Sands Ltd	385 450 320	0.71%	86 656 137	57%
Enbridge Inc	1 475 644 626	0.77%	846 196 435	113%
Imperial Oil Ltd	613 927 823	0.30%	375 192	10%
Murphy Oil Corp	480 948 420	0.75%	45 212 210	11%
Nexen Inc	549 542 405	0.70%	210 309 942	4%
Suncor Energy Inc	2 146 073 608	0.77%	383 734 307	18%
Other companies mentioned earlier: Chevron, Shell, ExxonMobil, Marathon Oil				

Source: Survey of oil sand producers is from Wikipedia<sup>44</sup>

## 6. USA's coal sector opens new export markets

For the environment it is a positive development that a large number of American coal power plants have been retired during the past few years, after pressure from the population and resolutions by the authorities. Simultaneously, gas production has increased and consumption of coal decreased. In 2012, 37.4% of USA's electricity production came from coal, compared with 48.5% in 2007.<sup>45</sup> This has, however, not made the coal producers reduce their extraction. Instead, they have found new markets and are now expanding their production and freight capacity in order to supply India and China with American coal. Cheap American coal in Asia has caused the consumption to increase, and it is possible for the coal companies to go in for continued production.

The most prominent coal companies in this expansion are Peabody<sup>46</sup>, CONSOL Energy<sup>47</sup>, Alpha Natural Resources<sup>48</sup>, Kinder Morgan Energy Partners<sup>49</sup> and Ambre Energy. The Pension Fund has invested in all except Ambre Energy.<sup>50</sup>



Pension Fund's investments in American coal companies that are increasing export	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
CONSOL Energy	453 121 119	1.11%	61 587 228	41%
Alpha Natural Resources	88 991 558	0.74%	-160 529 499	-21%
Kinder Morgan Energy Partners	1 155 397 603	0.52%	1 012 259 472	465%
Other companies mentioned earlier: Peabody				

Sources: Background<sup>51</sup> and companies<sup>52</sup>

## 7. Iraq's oil production catches up with its neighbors

Iraq has the world's fifth largest resources of oil and has surpassed Iran as the world's second largest producer of raw oil.<sup>53</sup> Iraq's oil production was kept down by sanctions against Saddam Hussein throughout the 1990s. Destroyed and worn-out oil infrastructure, the invasion in 2003 and the subsequent years of conflict have kept the production low for a long time. But now Iraq is in the process of increasing the production strongly. For several decades in the future Iraq will be one of the world's leading oil producers, unless an ambitious environmental policy manages to turn consumption away from fossil energy.

Statoil has been involved in Iraq through a share in the West Qurna field in Iraq but sold but sold off last year.<sup>54</sup> The company has, however, had luck with its investment in northern Iraq. They are operators in three oil fields, of which the field Tawke PSC is operative.<sup>55</sup>

Peension Fund's investments in oil companies with production in Iraq	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
Bashneft OAO	520 916 975	0.92%	-24 266 479	-31%
BP Plc	16 545 894 244	2.25%	-730 828 726	6%
CNOOC	157 821 238	0.03%	87 989 968	101%
ConocoPhillips	2 781 353 372	0.71%	-896 254 935	11%
GazpromNeft OAO	252 257 646	0.20%	-228 791 080	-46%
Korea Gas Corporation	29 697 571	0.10%	-3 647 910 735	-84%
Lukoil	5 521 601 774	1.78%	1 659 571 141	24%
Occidental Petroleum	2 462 576 075	0.71%	-1 096 869 982	-9%
Petrochina	7 224 980	0.00%	-7 388 731	Unknown
Other companies mentioned earlier: Chevron, Eni, ExxonMobil, Petronas, Shell, Total				

Sources: Al Jazeera<sup>56</sup>, InvestmentU<sup>57</sup> and Business Insider<sup>58</sup>

## 8. Oil Companies Go in for "Deep-Sea" Oil in the Gulf of Mexico

The Gulf of Mexico has long supplied the world with large amounts of oil. During the past few decades the oil industry has taken a big leap in technical development, such as seismic and drilling technology. Today it is possible to drill at greater ocean depths; seismic provides better information about geology in deep rock formations, and one is able to drill more precisely and also horizontally when necessary.

This has opened for a new oil adventure for "deep-sea" oil in the Gulf of Mexico. There are at present all of 46 operators<sup>59</sup> and more than 500 fields.<sup>60</sup> Oil exploration at great ocean depths got a temporary set-back after the well-known *Deep Horizon* accident in the Gulf of Mexico during the summer of 2010. The accident showed the dangers of this type of oil activity, in which oil is stored under extremely high pressure.

After the accident President Obama issued a temporary stop in oil extraction, but today the oil production in the Gulf is again going at full speed. More than 400 drilling licenses have been issued by the Obama administration after the *Deep Horizon* accident. In 2012 there were 40 drilling rigs in operation in USA's waters in the Gulf.<sup>61</sup> After a brief



decrease, the production is expected to increase again during the coming years, during which 8 oil fund companies will be responsible for 93% of the growth: Anadarko, BP, Shell, Chevron, BHP Billiton, ExxonMobil, Statoil, and Petrobras.<sup>62</sup>

An examination of all deep-sea fields in American waters shows that 21 companies are operators for more than 8 oil fields. Of these, The Pension Fund has invested in 18 companies. Shell, Anadarko, BP, Exxon, Eni, Chevron and Hess are definitely the biggest. Statoil is the operator for 5 deep-sea fields in the Gulf of Mexico.

Pension Fund's investments in oil companies with deep-sea production in the Gulf of Mexico	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
Anadarko Petroleum Corp	2 098 693 358	1.02 %	-109 867 120	5%
Hess	632 986 639	0.63 %	-203 332 884	-13%
Noble	1 037 911 770	1.03 %	810 853 083	107%
BHP Billiton Plc	11 644 799 798	1.14 %	1 142 058 723	1%
Walter Oil and Gas	156 204 189	1.25 %	-120 887 846	2%
Plains Exploration & Production Co	248 510 273	0.74 %	39 815 674	10%
Marubeni Corp	582 505 568	0.85 %	278 029 265	77%
Apache Corp	1 148 604 095	0.67 %	-573 346 894	-19%
Newfield Exploration Co	139 256 965	0.69 %	-63 243 372	3%
Stone Energy Corp	36 758 466	0.65 %	-13 916 715	-1%
Other companies mentioned earlier: Shell, BP, ExxonMobil, Eni, Chevron, Murphy oil, Marathon Oil, ConocoPhillips				

Sources: Background and *Deep Water*<sup>63</sup>, the situation after the BP accident<sup>64</sup>, list of oil fields and companies<sup>65</sup>

## 9. Brazil Goes in for "Pre-Salt" Oil

Some of the biggest new oil findings during recent years have been made offshore Brazil. As in the Gulf of Mexico, the oil fields are located at very great ocean depths and, in addition, under kilometers of rock and salt. One of the oil fields, Tupi, lies 5486 meters below the ocean floor. In some locations the salt layer alone is almost 2 km deep.

For Brazil's economy and the oil companies the oil fields are big and promising. The government oil company Petrobras plans to invest USD 53 billion in exploration and production in 2015, up from USD 33 billion in 2010.<sup>66</sup>

Extraction is considered technically difficult and potentially dangerous. The other drawback is that the expected production of 2 million barrels daily is a serious environmental threat. The result will be an increased emission of 330 million tons CO<sub>2</sub> yearly in 2020.

Norwegian companies have great competence about offshore and have flocked to Brazil to participate in the country's new oil adventure. Already in 2008, 53 Norwegian companies participated in the conference Rio Oil & Gas.<sup>67</sup> "Statoil is already well established in the country and today is an operator and has 60% ownership share in the big Peregrino field offshore Rio de Janeiro, as well as seven exploration licenses," Statoil states on its web pages.

Pension Fund's investments in oil companies that operate in Brazil's "pre-salt" production	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
Petroleo Brasileiro SA (Petrobras)	4 967 242 330	0.72%	-1 901 325 952	-3%
OGX Petroleo e Gas Participacoes SA	115 195 495	0.30%	-86 410 760	110%
Repsol SA	1 776 827 442	1.26%	-2 672 385 834	-36%
DCC plc*	372 455 369	2.45%	96 921 562	5%
Galp Energia SGPS	526 306 889	0.74%	51 084 875	14%
Other companies mentioned earlier: ExxonMobil, Shell, Chevron, BG Group, Hess				
* Owns British Gas LPG Ltd, which has ownership shares in the Carioca field				

Sources: For survey, refer to *Offshore Mag*<sup>68</sup> and *New York Times*<sup>69</sup>. Also check sources for OGX<sup>70</sup> and Repsol<sup>71</sup>



### 10. Kazakhstan Increases Oil Production

Kazakhstan has increased the pace of its oil extraction and is now attempting to climb in the ranking of the world's biggest oil producers. Today the country is number 11 for known oil reserves<sup>72</sup> but number 18 with regard to production.

In 2012 the country produced almost 80 million tons of oil but is aiming for 120 million tons in 2020.<sup>73</sup> According to the authorities, there are today 142 companies involved in the extraction of oil and gas, of which 48 are foreign and 20 are joint-venture companies.

The Kazakhstan in Kazakhstan is a giant field not yet in operation but will contribute to increased production by the country, according to the IEA.<sup>74</sup> Tengiz is the field that produces most today. The leading oil company is the partly government-owned KazMunaiGas, followed by the joint-venture company TengizChevroil, owned by Chevron and Exxon together with the government.<sup>75</sup> In addition to other leading international oil companies (BP, Shell, Gazprom and Lukoil), there are also some other oil fund companies we have not yet mentioned:

Pension Fund's investments in Kazakhstan's oil production	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
OMV Petrom SA	35 609	0.00%	35 609	New
Inpex Corp	2 672 427 869	2.48%	-214 692 050	18%
KazMunaiGas Exploration Production JSC	60 667 280	0.14%	-74 781 484	-61%
AP Moeller - Maersk A/S (Maersk oil)	2 243 039 736	1.25%	296 597 203	9%
Saipem	1 756 942 967	1.85%	-206 961 785	6%
Other companies mentioned earlier: Chevron, ExxonMobil, BG Group, Lukoil, BP, Shell, Gazprom				

Sources: "World Energy Outlook", 2010, Wikipedia<sup>76</sup>

### 11. USA Experiences Strong Growth in Shale Gas

The growth in extraction of shale gas in the USA bears the stamp of a new industrial adventure. A few years ago the USA was concerned about its dependence on imported oil from the Middle East. In the course of a few years the production of so-called shale gas multiplied. The change is mainly due to technologic development, by which horizontal drilling and so-called fracking have made it possible to release enormous amounts of gas that previously could not be utilized.

USA's Energy Information Administration (EIA) has during the past year decreased the extremely optimistic estimates for how much shale gas the country has. There are in any case large amounts to choose from. The EIA expects a 44% increase in all gas production from 2011 to 2040, almost all of it from shale gas.<sup>77</sup>

The carbon emission from shale gas is far lower than from coal, so a change from coal to shale gas reduces emissions. But shale gas, too, contributes carbon to the atmosphere. The investments now being made into the big, new shale gas adventure will tie the economy and energy supplies to new CO<sub>2</sub> emissions that will last for many decades to come.

The investments are considerable. A series of large shale gas fields are under development all over the USA. A list of companies that operate in the relatively new Eagle Ford field in Texas shows more than 81 active companies; the Pension Fund has invested in 34 of these. It is difficult to evaluate how important these 34 companies are in the development of shale gas. In our survey we have chosen 20 shale gas companies, cited as the leading ones in shale gas by Visiongain. The Pension Fund has invested in 19 of the 20; the only exception is Statoil, in which the Fund cannot invest.<sup>78</sup>



The most important oil fund companies in USA's strong growth in shale gas	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
Chesapeake Energy Corporation	379 409 757	0.62%	-101 629 456	13%
Devon Energy Corporation	758 014 701	0.65%	-103 243 606	13%
Encana Corporation	535 263 388	0.66%	61 231 095	13%
EOG Resources, Inc.	1 158 413 054	0.64%	171 535 386	3%
EQT Corporation	366 172 634	0.75%	27 655 274	8%
Exco Resources, Inc.	44 870 551	0.55%	-21 163 776	12%
Range Resources Corporation	378 275 968	0.67%	-47 920 887	-6%
Reliance Industries Limited (RIL)	959 698 656	0.34%	315 147 289	35%
National Fuel Gas Co /Seneca Resources Corporation	725 255 400	3.08%	-155 216 803	-4%
SM Energy Company	146 282 417	0.76%	-72 182 946	-3%
Southwestern Energy Company	492 713 440	0.76%	20 282 701	7%
Talisman Energy Inc.	578 775 364	0.89%	-462 787 099	-33%
Other companies mentioned earlier: Anadarko, BHP Billiton, Chevron, CONSOL, ExxonMobil, Marathon, Shell				

Sources: Visiongain<sup>79</sup> Wikipedia<sup>80</sup>

## 12. Big Gas Fields Found Offshore East Africa

Africa has for several decades supplied large amounts of oil to the world market, with countries like Nigeria, Angola, Algeria and Libya as the most important producers. A new chapter in Africa's oil adventure began a decade ago. Increasing oil prices and improvements in offshore oil (seismic and drilling in deep waters) made offshore oil exploration attractive. During the past 3 years the exploration has given good results, especially in the shape of big gas deposits offshore Africa's east coast. Big deposits have been made offshore Mozambique and Tanzania, and there is also hope for Kenya.

For Mozambique and Tanzania the gas fields give promise of energy, income and jobs. With a modest economy and CO2 emission as a point of departure, there is no reason to prevent the new gas nations from extracting the offshore gas

In an environmental perspective, however, the new gas fields constitute additions that the world's climate will not tolerate. The Pension Fund's investments in companies that are opening the gas fields offshore East Africa constitute yet an investment that increases the pressure on the environment.

Statoil is one of the two biggest participants in Tanzania. In 1 year the company has made three big gas findings.<sup>81</sup> Development of the gas fields here may become one of the company's biggest ever.<sup>82</sup>

The companies involved in the search for oil and gas in this region constitute a mix of well-known international oil companies and relatively small and new oil companies that have sprung up in the past few years.

Pension Fund's investments in oil companies offshore Tanzania and Mozambique	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership Share
Tullow	2 294 339 353	2.22%	-266 567 745	2%
Maurel & Prom*	220 208 260	1.95%	20 208 857	8%
Afren PLC	293 317 024	2.28%	42 444 114	-22%
Beach Energy ltd	386 646 261	3.58%	308 841 886	285%
Heritage Oil	86 868 074	1.95%	2 781 165	9%
Tullow Oil	2 294 339 353	2.22%	-266 567 745	2%
Sasol	1 894 551 715	1.23%	1 077 815 998	177%
PTT Exploration & Production PCL	637 077 262	0.54%	82 410 378	3%



Other companies mentioned earlier: ExxonMobil, Galp, Total, Eni, Anadarko, Shell  
\*(Etablissements Maurel et Prom)

Sources: Background<sup>83 84</sup>, distribution of fields<sup>85</sup>

### 13. Growth in Gas around the Caspian Sea

The countries that share the Caspian Sea are expected to increase production of gas considerably in the course of the next few years, the IEA predicts. The IEA estimates in its "World Energy Outlook" (2010) that gas production will be doubled from 2009 to 2035. Turkmenistan is expected to be the leader in this growth, followed by Azerbaijan and Kazakstan.<sup>86</sup> The growth will go towards both increased national consumption and export.

Azerbaijan has already produced oil for 100 years, and the region supplied the Soviet Union with energy for a long time. Now the region is being linked more closely to the markets in the West and East, by means of new pipelines towards both Europe and China.

The biggest field in the region is not located in the Caspian Sea itself but inland in Turkmenistan<sup>87</sup>: the gas field Galkynysh, previously known as South Yolotan.<sup>88</sup> Here Chinese CNPC, LG International, Hyundai Engineering and Petrofac Emirates are in the process of developing the field.<sup>89</sup>

In Azerbaijan the Shah Deniz field will be responsible for gas production in the future. The field has BP as operator, in collaboration with Statoil, SOCAR (Azerbaijan's oil company), Total, LukAgip, Iranian NICO and Turkish TPAO.

In Kazakstan the oil and gas fields are in the same area and with the same operators as mentioned in the above survey. Uzbekistan also has gas production, although not as large as those of the countries cited above. Gazprom, Petronas, CNPC and Korean National Oil Company and Kogas are all involved in its gas sector, which is led by the government's Uzbekneftegaz.<sup>90</sup>

Pension Fund's investments in companies involved in gas production around the Caspian Sea	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
LG International	143 882 908	1.48%	-245 874 592	-64%
Hyundai Engineering	246 670 106	0.61%	246 670 106	New
Petrofac Emirates	606 418 295	1.19%	60 026 752	1%

Other companies mentioned earlier: BP, Total, LukOil, Eni (Agip), Gazprom, Petronas, KNOC

Sources: "World Energy Outlook", 2010

### 14. Venezuela's Enormous Tar-Sand Resources

Venezuela has captured first place from Saudi Arabia on the list of countries that have the biggest known reserves of fossil energy.<sup>91</sup> Much of Venezuela's oil is oil sand, a heavy grade of oil not very different from Canada's oil sand. Venezuela has enormous amounts of oil sand, perhaps just as much as what exists of ordinary oil in the rest of the world. But it is expensive and difficult to extract, so only a small part of it may be extracted by means of today's technology and oil prices.

Ecofys expects a growth in the production of oil from oil sand in the Orinoco Belt from 0.5 million barrels daily in 2010 to 2.3 million barrels daily in 2035.



Pension Fund's investments in Venezuela's tar sand	Amount invested	Ownership share	Growth/reduction in amount invested	Change in ownership share
Mitsubishi Corp	1 208 330 215	0,69 %	140 194 877	29%
TNK-BP Holding	183 523 760	0,13 %	42 079 077	97%
Surgutneftegas OAO	1 138 349 375	0,98 %	-430 563 691	-38%
Oil & Natural Gas Corp Ltd	319 139 372	0,14 %	108 177 705	64%
Indian Oil corp	100 101 138	0,15 %	100 101 138	New

Other companies mentioned earlier: BP, Total, Repsol, Eni, Gazprom, Lukoil, Petronas, Rosneft

Sources: Background<sup>92</sup> and companies<sup>93 94</sup>

### International Oil Search

The international oil companies have spread their activities all over globe and are continually searching for new exploration projects in order to maintain their production. This table shows how some well-known international companies participate in several of the projects we have analyzed above:

	Statoil	Anadarko	BP	BG Group	Chevron	Conoco-Phillips	Eni	ExxonMobil	Gazprom	Hess	Lukoil	Marathon Oil	Petronas	Repsol	Rosneft	Shell	Total
Race for oil in the Arctic	X			X	X	X	X	X	X			X	X		X	X	X
Canada's tar sand production	X				X			X				X				X	
Iraq's increased oil production			X		X	X	X	X	X		X		X			X	X
Oil companies in Gulf of Mexico	X	X	X		X	X	X	X		X		X				X	
Brazil goes in for "pre-salt" oil	X			X	X			X		X				X		X	
Kazakhstan's oil production	X		X	X	X			X	X		X					X	
USA's growth in shale gas	X	X			X			X				X				X	
Gas expansion in East Africa	X	X					X	X								X	X
Gas around the Caspian Sea	X		X														X
Venezuela's tar sand	X		X				X		X		X		X	X	X		X



<sup>1</sup> Unless Carbon Capture and Storage is introduced on a large scale - something that so far only exists in a trial stage.

<sup>2</sup> [www.statoil.com/no](http://www.statoil.com/no)

<sup>3</sup> <http://www.aftenposten.no/klima/Dette-vil-skje-i-en-4-grader-varmere-verden-7048347.html>

<sup>4</sup> <http://www.independent.co.uk/environment/climate-change/methane-levels-may-see-runaway-rise-scientists-warn-1906484.html>

<sup>5</sup> <http://www.greenpeace.org/international/Global/international/publications/climate/2013/PointOfNoReturn.pdf>

<sup>6</sup> We have twice made quick searches for companies involved in shale gas in the USA and oil sand in Canada and found many companies not included in the list.

<sup>7</sup> [www.nbim.no](http://www.nbim.no)

<sup>8</sup> <http://www.framtiden.no/201211155817/aktuelt/etiske-investeringer/oljefondets-problematiske-karbonboble.html>

<sup>9</sup> <http://www.carbontracker.org/wp-content/uploads/downloads/2012/08/Unburnable-Carbon-Full1.pdf>

<sup>10</sup> <http://www.greenpeace.org/international/Global/international/publications/climate/2013/PointOfNoReturn.pdf>

<sup>11</sup> The Government Pension Fund - Global. The sums for amount invested and ownership share are those furnished by the Pension Fund as of 31 December 2012. The increase in value is the difference in amount invested from 31 December 2011 to 31 December 2012. The change in ownership share is the percentage change in ownership share in the same period; if the Pension Fund's ownership share in a company has increased from 1.0% to 1.5%, this will give a change in ownership share of 50%. This indicates that the Pension Fund has bought several shares in the company.

<sup>12</sup> <http://www.greenpeace.org/international/Global/international/publications/climate/2013/PointOfNoReturn.pdf>

<sup>13</sup> <http://www.chinamining.org/News/2012-02-01/1328075124d53839.html>

<sup>14</sup> [http://en.wikipedia.org/wiki/Coal\\_in\\_China](http://en.wikipedia.org/wiki/Coal_in_China)

<sup>15</sup> [www.nbim.no](http://www.nbim.no)

<sup>16</sup> <http://www.greenpeace.org/international/Global/international/publications/climate/2013/PointOfNoReturn.pdf>

<sup>17</sup> [http://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_carbon\\_dioxide\\_emissions](http://en.wikipedia.org/wiki/List_of_countries_by_carbon_dioxide_emissions)

<sup>18</sup> [http://mines.industry.qld.gov.au/assets/coal-pdf/new\\_coal\\_min\\_adv\\_proj.pdf](http://mines.industry.qld.gov.au/assets/coal-pdf/new_coal_min_adv_proj.pdf)

<sup>19</sup> [http://mines.industry.qld.gov.au/assets/coal-pdf/new\\_coal\\_min\\_adv\\_proj.pdf](http://mines.industry.qld.gov.au/assets/coal-pdf/new_coal_min_adv_proj.pdf)

<sup>20</sup> <http://www.telegraph.co.uk/finance/newsbysector/energy/oilandgas/9972768/Shell-to-sign-Russian-Arctic-deal-with-Gazprom-Neft-Kremlin-reveals.html>

<sup>21</sup> [www.statoil.com](http://www.statoil.com)

<sup>22</sup> <http://www.ft.com/intl/cms/s/0/759ded88-191a-11e2-af4e-00144feabdc0.html#axzz2POWqhSND>

<sup>23</sup> <http://www.dn.no/energi/article2599096.ece>

<sup>24</sup> <http://www.telegraph.co.uk/finance/newsbysector/energy/oilandgas/9972768/Shell-to-sign-Russian-Arctic-deal-with-Gazprom-Neft-Kremlin-reveals.html>

<sup>25</sup> See OED's concession rounds for the Barents Sea.

<sup>26</sup> <http://www.ft.com/intl/cms/s/0/bdb6e8c6-16dc-11e2-8989-00144feabdc0.html#axzz2Qu11Pojh>

<sup>27</sup> <http://www.worldcoal.org/resources/coal-statistics/>

<sup>28</sup> <http://www.minesandcommunities.org/article.php?a=10299>

<sup>29</sup> <http://www.greenpeace.org/international/Global/international/publications/climate/2013/PointOfNoReturn.pdf>



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- <sup>30</sup> <http://www.kpc.co.id/index.php/profile/ownership>
- <sup>31</sup> <http://www.minesandcommunities.org/article.php?a=10299>
- <sup>32</sup> <http://tinyurl.com/cmcpvcd>
- <sup>33</sup> <http://english.jatam.org/dmdocuments/DC%20ingg02.pdf>
- <sup>34</sup> [http://www.sourcewatch.org/index.php/Indonesia\\_and\\_coal](http://www.sourcewatch.org/index.php/Indonesia_and_coal)
- <sup>35</sup> <http://ran.org/list-tar-sands-companies>
- <sup>36</sup> [http://www.banktrack.org/manage/ajax/ems\\_dodgydeals/createPDF/canadian\\_tar\\_sands](http://www.banktrack.org/manage/ajax/ems_dodgydeals/createPDF/canadian_tar_sands)
- <sup>37</sup> <http://oilsands.infomine.com/companiesproperties/>
- <sup>38</sup> [http://www.exxonmobil.com/Corporate/energy\\_production\\_oilsands.aspx](http://www.exxonmobil.com/Corporate/energy_production_oilsands.aspx)
- <sup>39</sup> [http://en.wikipedia.org/wiki/Athabasca\\_oil\\_sands](http://en.wikipedia.org/wiki/Athabasca_oil_sands)
- <sup>40</sup> <http://en.wikipedia.org/wiki/Syncrude>
- <sup>41</sup> [http://en.wikipedia.org/wiki/Athabasca\\_oil\\_sands](http://en.wikipedia.org/wiki/Athabasca_oil_sands)
- <sup>42</sup> <http://www.statoil.com/no/About/Worldwide/NorthAmerica/canada/OilSands/Pages/StatoilInCanada.aspx>
- <sup>43</sup> <http://e24.no/boers-og-finans/ny-runde-om-oljesand-i-statoil/20368707>
- <sup>44</sup> [http://en.wikipedia.org/wiki/Athabasca\\_oil\\_sands](http://en.wikipedia.org/wiki/Athabasca_oil_sands)
- <sup>45</sup> <http://www.economist.com/news/united-states/21576401-rancorous-scrap-over-plans-send-american-coal-asia-dirty-war>
- <sup>46</sup> <http://www.eenews.net/public/climatewire/2012/07/18/2>
- <sup>47</sup> [http://www.sourcewatch.org/index.php?title=U.S.\\_coal\\_exports](http://www.sourcewatch.org/index.php?title=U.S._coal_exports)
- <sup>48</sup> [http://www.sourcewatch.org/index.php?title=U.S.\\_coal\\_exports](http://www.sourcewatch.org/index.php?title=U.S._coal_exports)
- <sup>49</sup> [http://www.sourcewatch.org/index.php?title=U.S.\\_coal\\_exports](http://www.sourcewatch.org/index.php?title=U.S._coal_exports)
- <sup>50</sup> The other American coal producers are not included in this survey.
- <sup>51</sup> <http://www.economist.com/news/united-states/21576401-rancorous-scrap-over-plans-send-american-coal-asia-dirty-war>
- <sup>52</sup> <http://www.greenpeace.org/international/Global/international/publications/climate/2013/PointOfNoReturn.pdf>
- <sup>53</sup> <http://www.eia.gov/countries/country-data.cfm?fips=IZ>
- <sup>54</sup> <http://www.reuters.com/article/2012/02/02/iraq-oil-qurna-idUSL5E8D25HR20120202>
- <sup>55</sup> <https://www.dno.no/dno-operations/kurdistan-region-of-iraq/our-assets-in-kurdistan/>
- <sup>56</sup> <http://www.aljazeera.com/indepth/features/2011/12/2011122813134071641.html>
- <sup>57</sup> <http://www.investmentu.com/2012/December/iraqs-oil-boom.html>
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- <sup>59</sup> <http://www.offshore-mag.com/articles/print/volume-72/issue-11/departments/gulf-of-mexico/e-p-activity-drives-deepwater-gom-revival.html>
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- <sup>61</sup> <http://theweek.com/article/index/225199/the-return-of-deepwater-drilling-by-the-numbers>
- <sup>62</sup> <http://www.offshore-mag.com/articles/2012/06/gom-deepwater-production-to-increase-through-2016.html>
- <sup>63</sup> <http://www.touchoilandgas.com/deepwater-activity-mexico-continues-a7145-1.html>



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- <sup>64</sup> [http://www.nytimes.com/2012/03/05/business/deepwater-oil-drilling-accelerates-as-bp-disaster-fades.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2012/03/05/business/deepwater-oil-drilling-accelerates-as-bp-disaster-fades.html?pagewanted=all&_r=0)
- <sup>65</sup> [http://www.data.boem.gov/homepg/data\\_center/other/tables/deeptbl2.asp](http://www.data.boem.gov/homepg/data_center/other/tables/deeptbl2.asp)
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- <sup>67</sup> <http://www.offshore-mag.com/articles/print/volume-68/issue-10/drilling-completion/brazilrsquos-pre-salt-discoveries-a-magnet-for-oil-companies.html>
- <sup>68</sup> <http://www.offshore-mag.com/articles/print/volume-68/issue-7/brazil/pre-salt-discoveries-continue-in-brazil.html>
- <sup>69</sup> <http://www.nysemagazine.com/petrobras?page=2>
- <sup>70</sup> <http://seekingalpha.com/article/1280491-diamond-offshore-drilling-brazil-pre-salt-and-growth>
- <sup>71</sup> <http://www.bloomberg.com/news/2013-01-08/bg-starts-commercial-oil-output-from-brazil-s-pre-salt-sapinhoa.html>
- <sup>72</sup> <http://www.indexmundi.com/g/r.aspx?t=0&v=97&l=en>
- <sup>73</sup> <http://en.tengrinenews.kz/markets/Kazakhstan-planning-to-boost-oil-production-output-to-120-million-tons-a-year-by-18324/>
- <sup>74</sup> WEO2010
- <sup>75</sup> [http://en.wikipedia.org/wiki/Energy\\_policy\\_of\\_Kazakhstan](http://en.wikipedia.org/wiki/Energy_policy_of_Kazakhstan)
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- <sup>81</sup> <http://www.aftenbladet.no/energi/Statoil-med-nytt-gassfunn-i-Tanzania-3142547.html#.UX-68me3S3E>
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