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CENTRE FOR GLOBAL STRATEGIC ANALYSIS

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Oil Export Declines by 2020

Version 1.1.1
10 May 2012
(Classification: P/Public)

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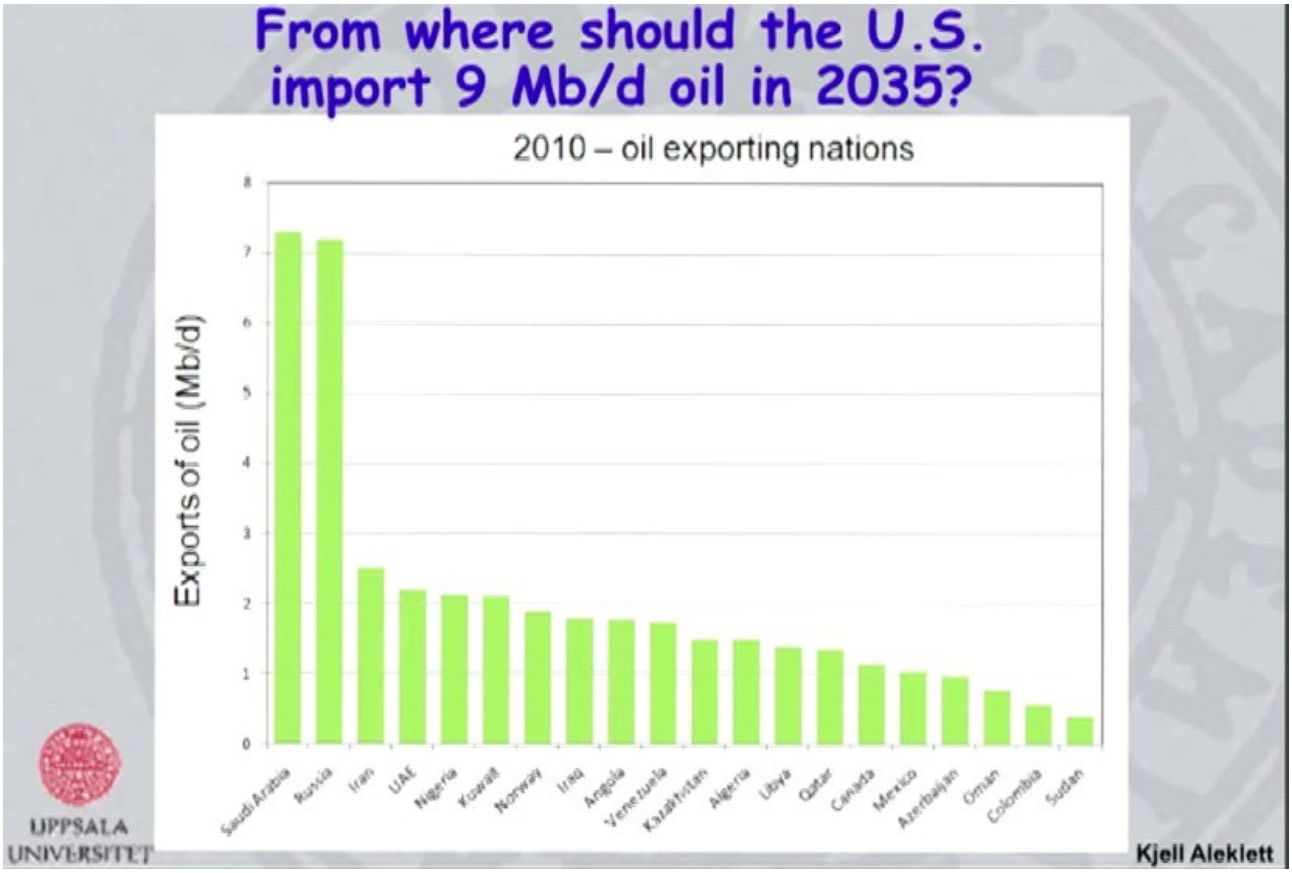
Oil export declines by 2020
Under a Business as usual (BAU) scenario (based on the work of Jeffrey Brown), Saudi oil exports are expected to decline from their approximately 7.5mb/d to only 3mb/d by 2020 and Russian oil exports could decline from approximately 7mb/d to only 1.5mb/d. In general by 2020 most oil exporters can be expected to reduce their oil exports by 2020.

Country	2010 oil exports mbd	2020 oil exports mbd
Russia	~ 7	~ 1.5
Saudi Arabia	~ 7.5	~ 3
Iran	~ 2.5	~ 1
UAE	~ 2	~ 1
Norway	~ 2	~ 1
Total	**~ 21**	**~ 7.5**

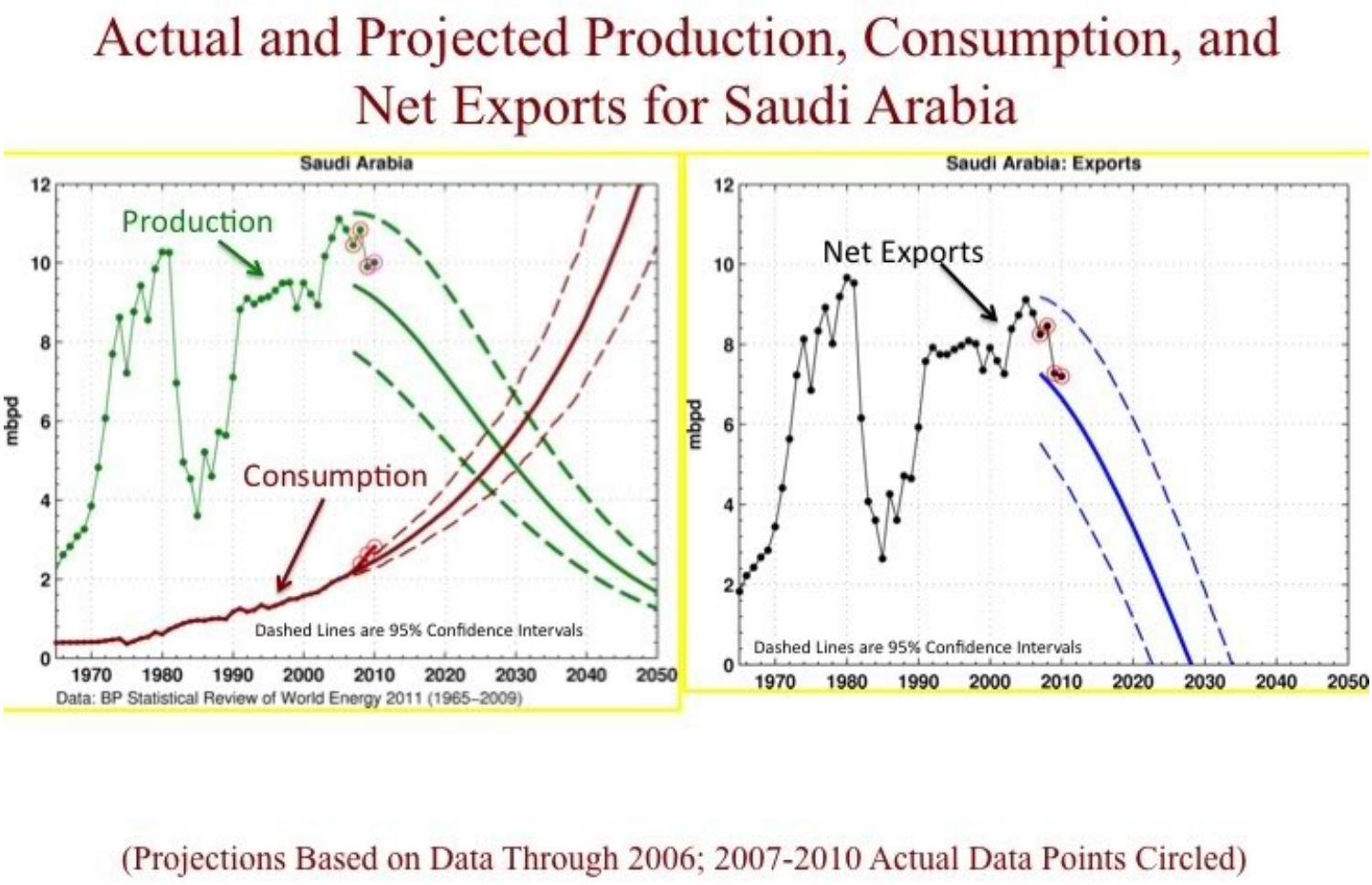
At 21mb/d the countries listed above account for approximately half of total global oil exports of approximately 42mb/d. Their combined oil exports may decline by almost 65% by 2020. It is doubtful that the rest of he oil exporters will perform any better.

2010 oil exports (Source:Kjell Aleklett, ASPO Europe)



The high decline rates are due to a concept known as the "Export Land Model"[1] developed by Jeffrey Brown. The Export Land Model is the key reason why the west will experience very severe energy shocks within the next few years. If production falls faster than 1% per year the oil export declines can be very rapid. The situation is even worse when accounting for EROI [2]. At the same time the domestic oil and gas fields of the North Sea and US are rapidly depleting. Potentially leaving Europe and the US with little domestic oil and gas at the same time as imports are declining.

Some public charts on declines in net exports of oil (Source: Jeffrey Brown, The oil drum)



Right now most analysts are beginning to realise that there is little or no spare oil production capacity in the global system. European oil reserves are still depleted from the war with Libya. Until new pipelines are build the US is limited to only being able to release a maximum of 700Kb/d from its strategic petroleum reserve in the event of an emergency. The US elections begin towards the end of this year and the US summer driving season will be starting in a few months.

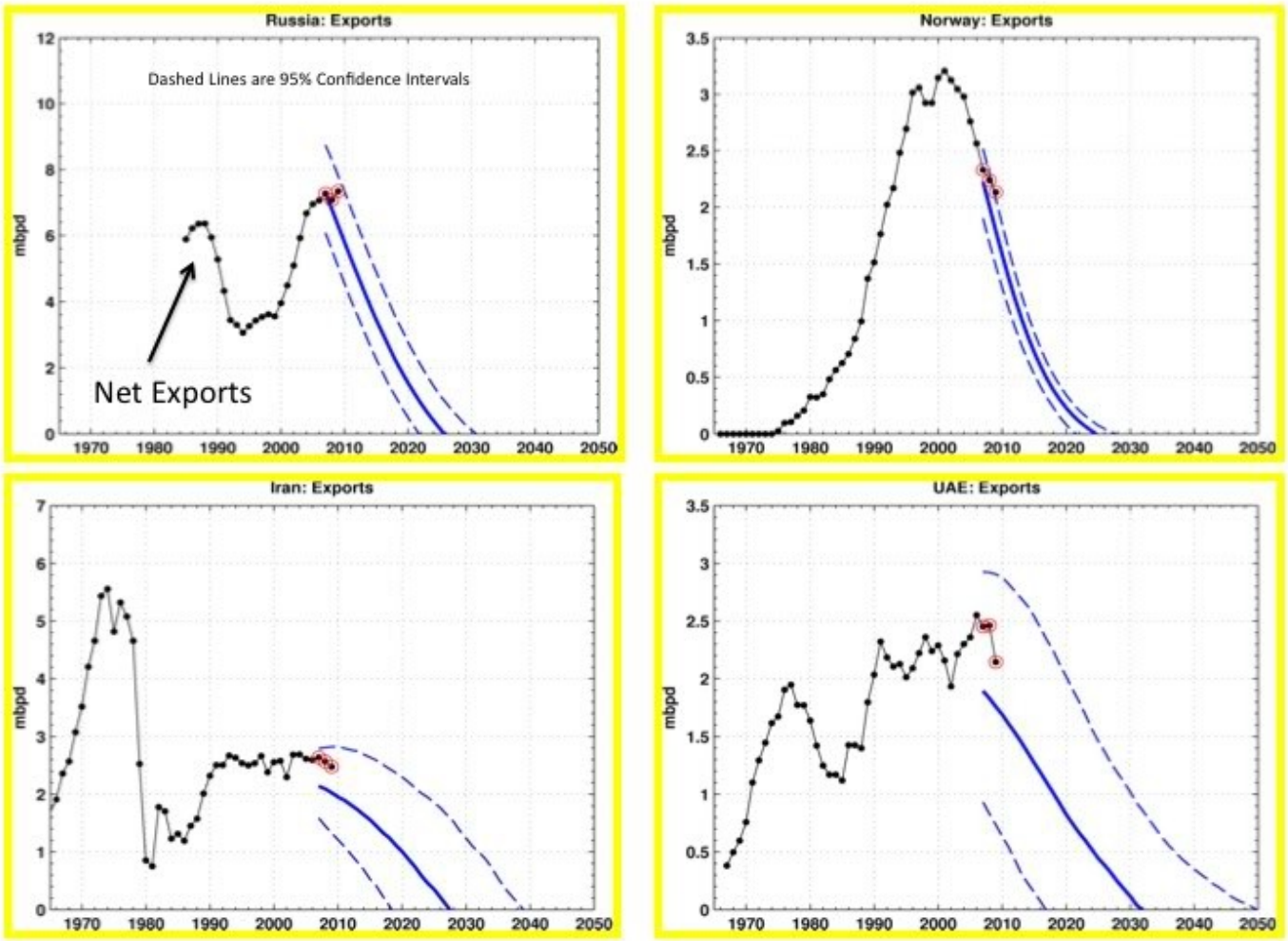
The only way that the OECD can avoid an energy crisis is if the oil sanctions on Iran are not successful. As the oil export decline charts below show by next year the global oil export situation will likely have worsened.

It may be unwise to infer from this that the OECD will be unable to cause further difficulties for Iran due to their rapidly emerging energy crisis. Far from it, as I have always tried to explain it is exactly because the OECD is facing an existential threat from declining oil imports that they are becoming increasingly hostile towards Iran.

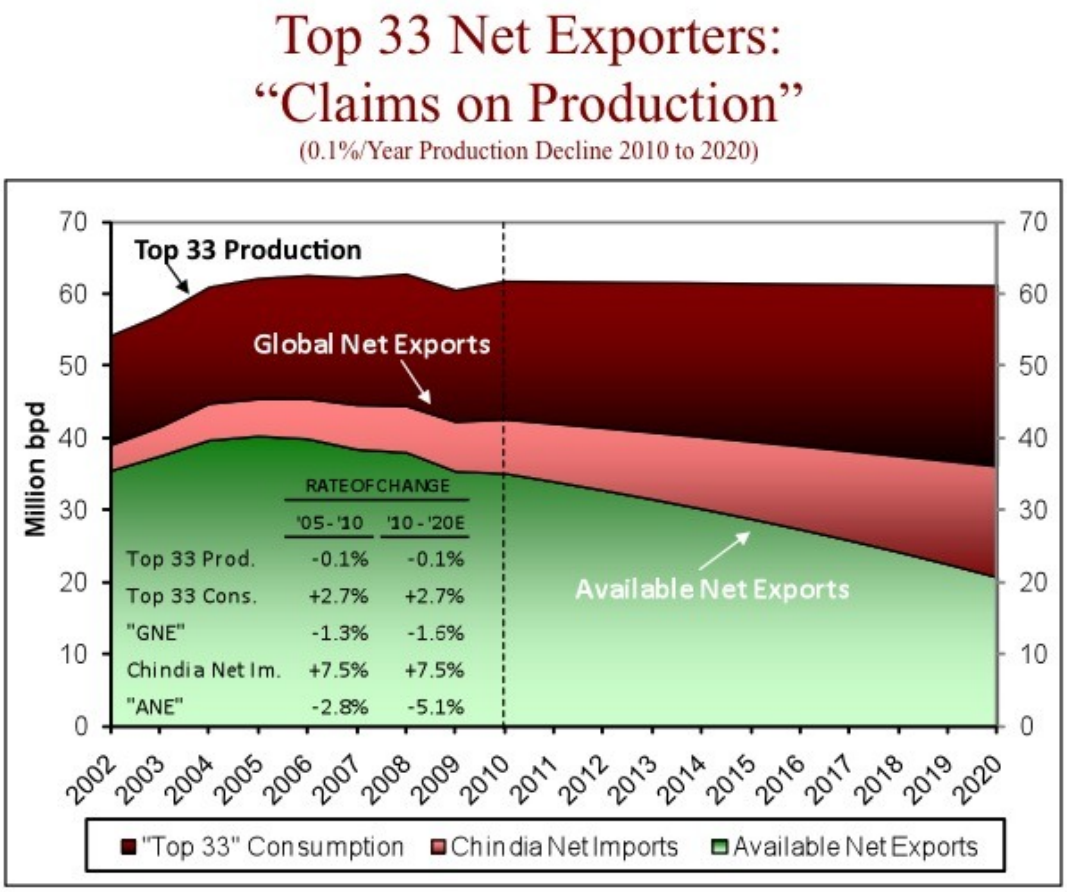
We are working on projects designed to resolve these energy and food security issues for the OECD and the [P]GCC and hopefully reduce the geopolitical tensions. Unfortunately right now it looks as though the earliest that any project can be scaled up sufficiently to have a useful effect is at least 5-10 years from now. As can be seen from the charts below within 8 years (2020) oil exports to the OECD my have declined by up to 50% from peak levels. It is important to remember that OECD oil import problems will be made much worse by the decline in domestic oil production for the OECD. Extreme conditions can create extreme situations.

Right now we are unable to accurately estimate how severe the situation will become for the OECD before our projects are able to assist with the recovery.

Some public charts on declines in net exports of oil (Source: Jeffrey Brown, The oil drum)



Below a is basic, publicly available model produced by Jeffrey Brown of the expected amount of oil exports available to the OECD for a 0.1% average decline rate in gross oil production. Note that a 0.1% decline rate is far too optimistic and highly unlikely.



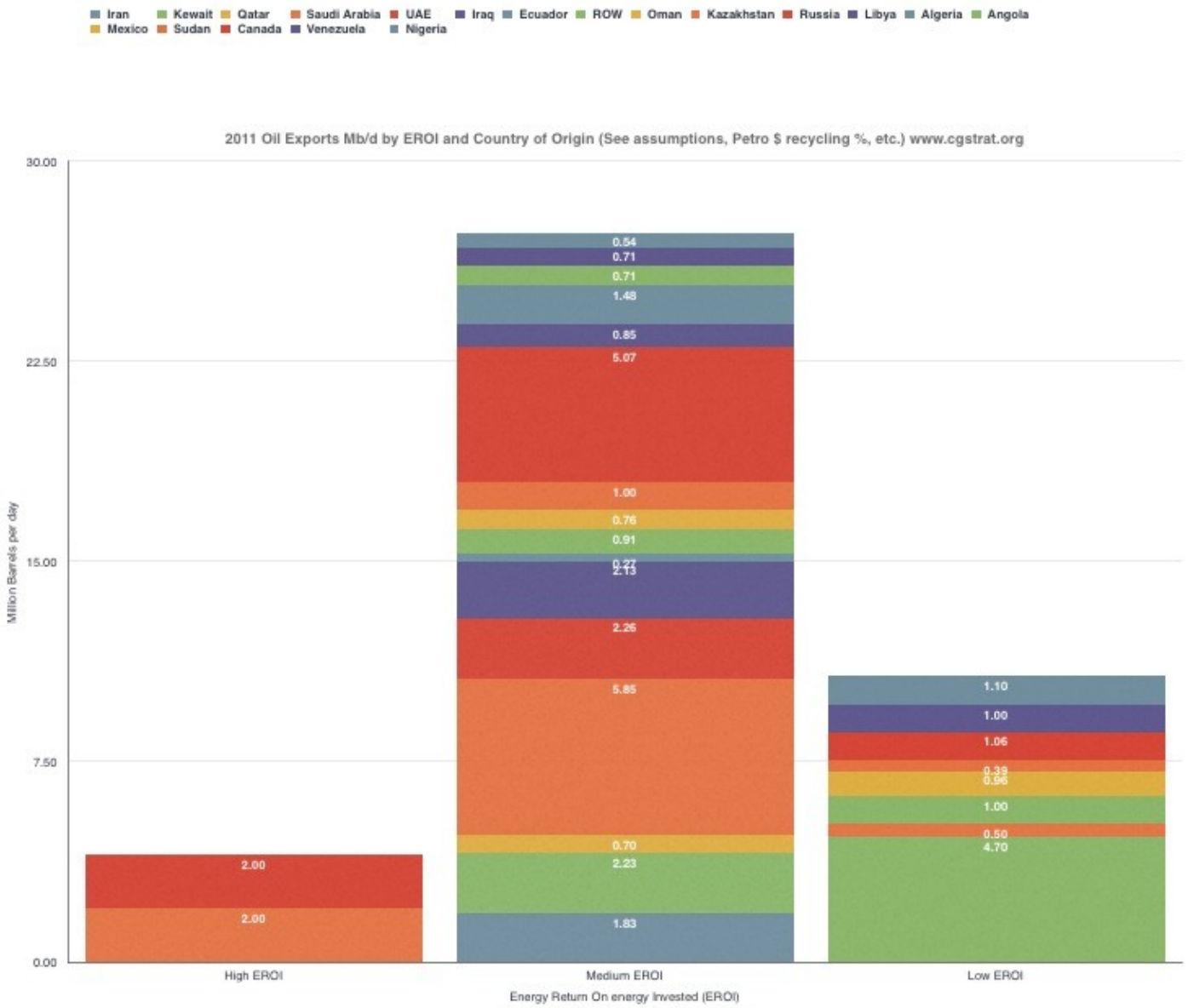
To understand the scale of impact caused by a 50-65% decline in oil imports it may be useful to consider that the greater economic depression of the past few years may have been caused by a mere 5-10% decline in available oil exports to the OECD. Adding the effects of the depletion from domestic OECD oil production and the decline in the EROI of oil global production and the emerging situation becomes increasingly challenging.

As a result there may be increasing pressure for the OECD to interdict the flow of oil to China, India and the developing world in order to limit the loss of oil supplies to the OECD. Such action could be extremely hazardous since the rest of the world depends on China for essential Phosphates and basic manufactured components. Because of just in time logistics any major disruption to the supply chain threatens to cause a catastrophic global cascade failure.

Some of our projects are designed to address this issue and it is expected that they will provide the fastest simplest and most cost effective short term solution. However once again it may take at least 5-10 years before these issues can be resolved.

Below is a chart from our own initial preliminary research:

The EROI of global oil exports by country for 2010-2011

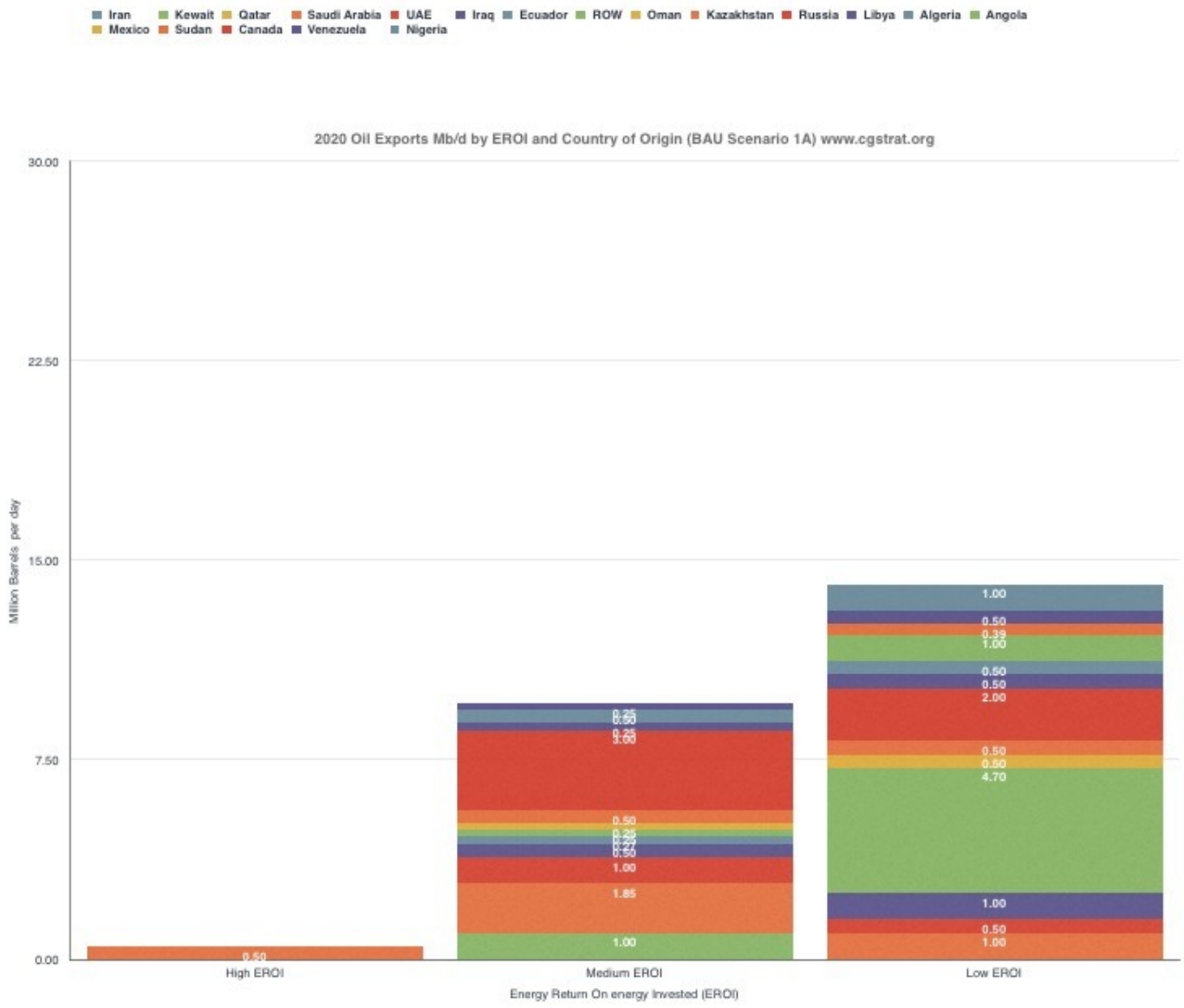


We have generated a initial estimate of the volume of global oil exports by country and EROI for 2020. Please note that the export number are very speculative and the EROI calculations for oil **exports** are very subjective. There is a difference between the EROI of oil production and exports. Even if the oil production itself is high EROI the exports may be low EROI.

For example during the 1980s Saudi Arabia produced high EROI oil. This oil was exported and sold for dollars. Most of the money earned from the sale of the oil was immediately deposited in US and OECD banks (petro dollar recycling). The money and the energy were consumed in the OECD. Therefore the EROI of the oil exports was high.

Today Saudi Arabia charges more for oil and is increasingly spending the oil income domestically. Therefore the effective EROI of its oil exports are declining regardless of the EROI of the oil production because increasingly Saudi Arabia and not the west are the final consumer of the energy in the oil it produces.

The EROI of global oil exports by country for 2020



End Notes:

[1] http://en.wikipedia.org/wiki/Export_Land_Model
[2] http://en.wikipedia.org/wiki/EROEI