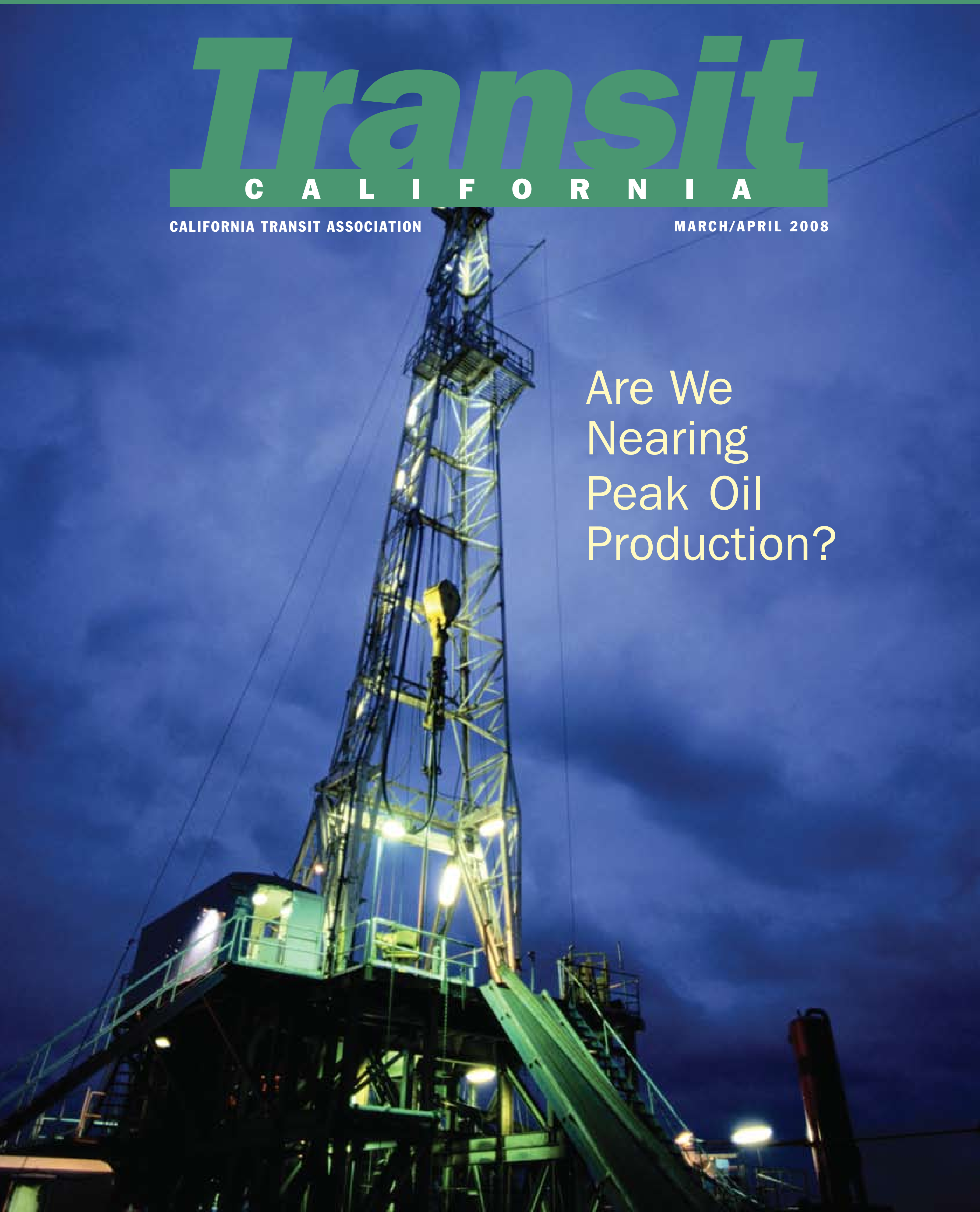
OCTA MEETING CARB EMISSION REQUIREMENTS WITH CNG

Transit
CALIFORNIA

CALIFORNIA TRANSIT ASSOCIATION
MARCH/APRIL 2008



Are We Nearing Peak Oil Production?

Are We Nearing Peak Oil Production?

BY DEBBIE COOK

Mayor, City of Huntington Beach

Core to all U.S. transportation planning is the assumption that oil will always be abundant and cheap. This premise continues to dominate every regional transportation plan in the country and drives our auto-centric development patterns. But what if this assumption is wrong? What if we are near the peak of world oil production? It then follows that our assumptions on construction costs, gas tax revenues, travel and aviation demand, mode choice, and growth patterns are also wrong. It would mean that our fossil fuel-based energy future is in jeopardy and that we are not prepared.

On January 22, the Chief Executive of Shell, Joroen van der Veer, released a sobering letter to his colleagues. In it he added his name to the growing list of energy experts warning that world demand for oil and gas will soon outstrip supply. This is more than an alarming message; it is a sticky idea. It is "peak oil" – the point when the rate of oil extraction hits its zenith.

EVER-GROWING ENERGY CONSUMPTION

Since 1956 when Shell geologist M. King Hubbert first predicted a 1970 U.S. peak in production, governments, oil companies, and the mainstream media have refuted the notion of an oil peak by delivering a message of plenty, of technological solutions, of markets overcoming shortages. Except for a few minor hiccups, they have delivered. The supply disruptions resulting from the 1973 Arab oil embargo, the 1979 Iranian Revolution, and the 1990 Gulf War were short lived and man-made. Caution-induced efficiency programs were thrown to the wind when supplies not only returned to normal, but also expanded further. Oil prices hit bottom. Economies around the world revved up with cheap oil and globalization. World per capita energy consumption shot upward, including the United States. Ignoring those earlier warnings, the U.S. became more dependent upon foreign oil to make up for its own declining production. Today, foreign oil accounts for 60 percent of our needs, and U.S. demand, driven by transportation, has not yet been curbed with high prices.

Figure 1 tracks world per capita energy consumption over the last 25 years. The data source is the Energy Information Administration (EIA), which was created by Congress in 1977, and is a statistical agency of the U.S. Department of Energy. It illustrates that despite higher energy prices, efficiency measures, or advancing technology, global per capita energy consumption is growing at an alarming rate. *Figure 2* offers a view of consumption vs. production from 1949 to 2006. Note here the ever-growing demand for imported oil.

GLOBAL WARNING

As a frog is apt to stay in a pot of water when the temperature is slowly increased, neither do the warning signs of 2007 appear to be calling Americans to action. A few of the signs include civil unrest in Asia and Africa due to rising fuel and food prices; region-wide power outages in China, India, Argentina, and South Africa and gasoline rationing in Iran. So far, these are problems "over there." The assumption is that "over here" markets will respond gradually, logically, peacefully, and without the need for government interference. The battle cry from the Wall Street crowd proclaims all that is needed is more access, more investment, and more efficiency. Unfortunately, time is running short on heeding a number of alarming, irrefutable trends coming from the oil patch.

WORLD OIL PRODUCTION STAGNATES

World oil production has been flat for 32 months. *Figure 3* shows world oil production stagnation. Despite the repeated urgings by U.S. officials to increase production, OPEC continues to rebuff demands and claim that the world is well supplied. Meanwhile, the price of oil hit an all-time-high of $100 per barrel on January 2.

OIL REGIONS IN DECLINE

An increasing number of oil regions have now passed their peak production rates and are settling into irreversible decline. The inscrutable pronouncements regarding the application of technology to boost production has never been demonstrated to reverse the overall downward trend of oil fields. According to CIBC World Markets Chief Economist and Strategist Jeff Rubin, the 4.3 million barrels per day that will come into production this year will be offset by nearly 3.6 million barrels lost through annual depletion. This means that as depletion grows, it will be increasingly difficult to bring on new projects to compensate.

> Recently the Chief Executive of Shell, Joroen van der Veer, added his name to the growing list of energy experts warning that world demand for oil and gas will soon outstrip supply.

In a review of nearly 200 new oil projects slated to start production in the next five years, Rubin found that project delays and cost overruns are now the rule rather than the exception in the industry. Collectively, these delays coupled with increasingly rapid depletion will result in a net supply increase of only 3 million barrels per day by 2012 versus the 10 million barrels per day projected by the International Energy Agency.

OIL DISCOVERIES PEAK

World oil discoveries peaked in the 1960s. Despite the celebratory announcements of new deepwater oil fields, these discoveries tend to be small and technically challenging to produce. The Association for the Study of Peak Oil and Gas (ASPO), which started as a European network of scientists and others and is now worldwide, reports that world oil discoveries have been declining since 1964 (*See figure 4*). The world is now consuming 31 billion barrels per year but finding only seven or eight.

DIMINISHING EXPORT CAPACITY

Net exports from the world's largest oil producers will decline as their own internal consumption by a burgeoning population grows. *Figure 5* illustrates the growing consumption within Saudi Arabia. The country's rapid population growth is placing increasing pressure on social sectors. With 40 percent of

Figure 1.

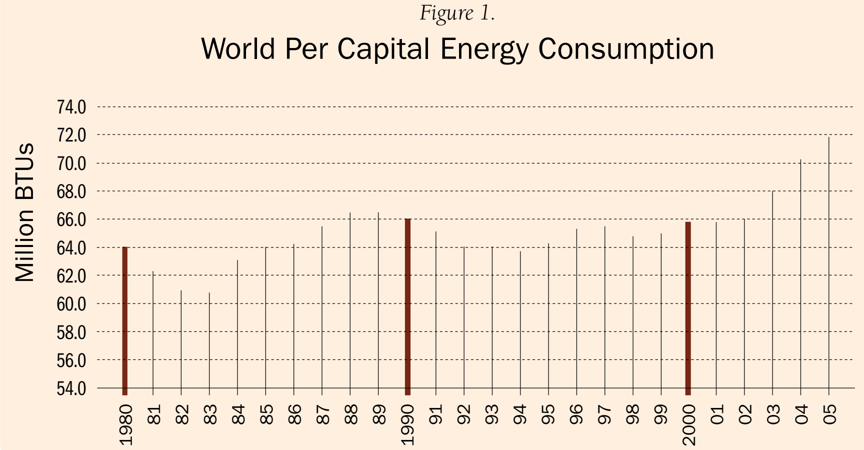


Figure 2.

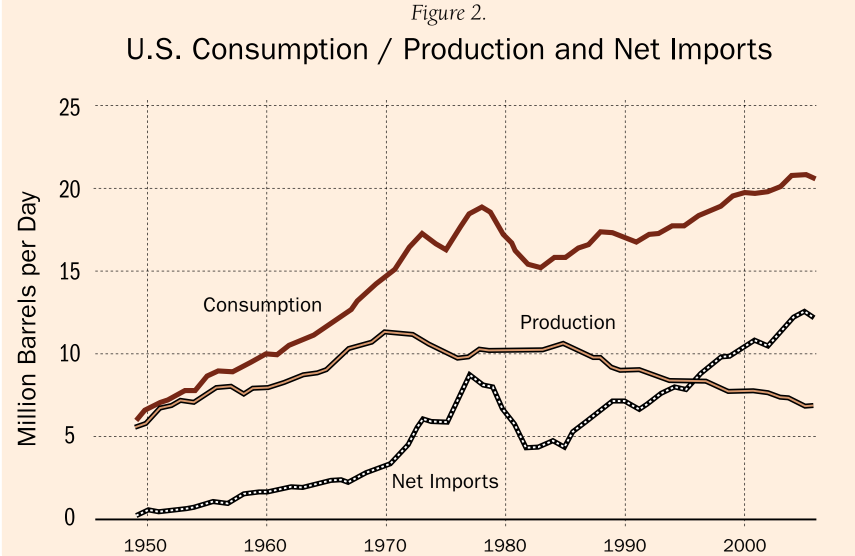


Figure 1. & 2. Source: EIA

Saudi Arabia's population under age 15 coupled with the expectation that the government will grant women the right to drive cars by the end of 2008, Saudi Arabia's internal requirements will only grow. Within Russia, Mexico, and OPEC, consumption is projected to rise from 13 million barrels per day to 16 million barrels per day by 2012. This soaring internal consumption will cannibalize export capacity and place even higher demand on oil available to the Organization for Economic Cooperation and Development (OECD) nations.

RESPONDING TO THE CHALLENGE

All of these trends ensure that oil markets will continue to be tight and oil prices high. How high is a matter of speculation. But a growing chorus of industry experts has predicted a sharp spike by the fourth quarter of 2008.

Averting the economic and social consequences of declining fossil fuel resources and budget-gutting energy prices is the role of government – especially at the federal level where policy sets the framework and tone for state and local governments. Public expectation is that government will be prepared to mitigate against, plan for, respond to, and recover from a full range of emergencies. Why not peak oil? This is one emergency where early actions improve mobility, air quality, land use utilization, national security, and the economy.

The Southern California Association of Governments is one of the few Metropolitan Planning Organizations in the nation that have incorporated a discussion of peak oil in both its Regional Transportation Plan and Regional Comprehensive Plan. While no amount of talk will fill the energy gap of depleting oil supplies, it will become increasingly difficult for Washington to avoid planning and implementing meaningful peak oil strategies if agencies and policymakers begin to question the assumptions of infinite cheap oil.

Reprinted 2008 with permission of the California Transit Association.

Figure 3.

World OIl Production Stagnates

Figure 4.

Oil Discoveries Fall

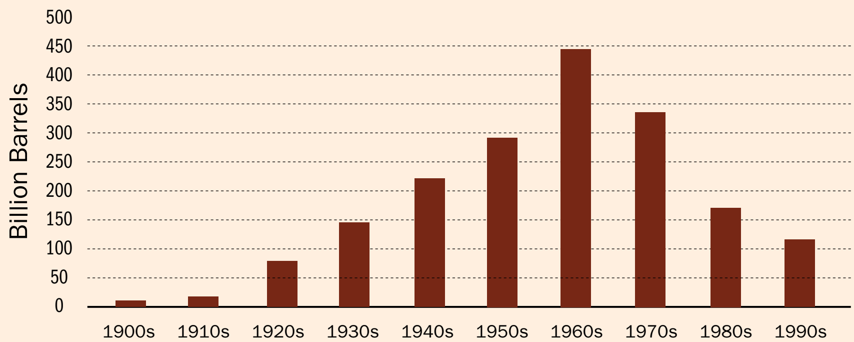


Figure 5.

Saudia Arabia Exports Decline

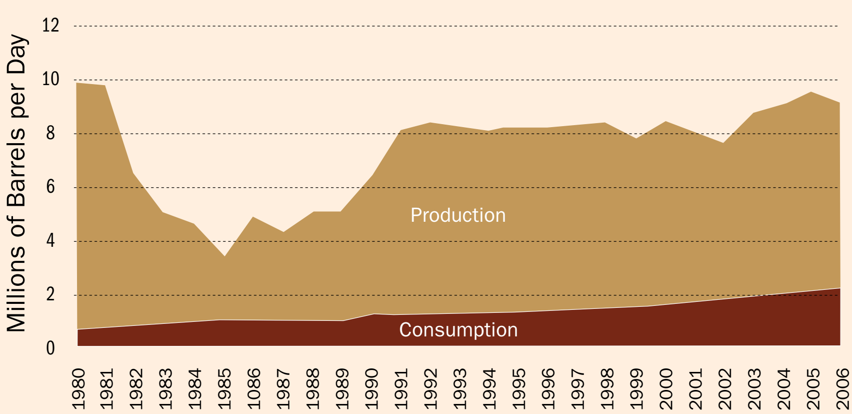


Figure 3. Source: EIA / Figure 4. Source: ASPO / Figure 5. Source: EIA