Forecasts of peak oil production have focused on the global impacts of declining production. Meanwhile, national oil production has declined in 23 countries, leading to local problems that result from limited supplies in those countries. The problems described here are local, but they may have implications for global oil markets and relations between oil-producing and oil-consuming countries.

Most of oil producing countries with large reserves adopted licensing practices that provide significant financial benefits to host governments. These practices have allowed governments to spend substantial amounts of oil revenues on public works, subsidies, and infrastructure projects. The added cost of these projects is passed on to consumers, who endure higher costs for energy, fuels, and other items. However, as production declines, the economic benefits to host governments to these projects are reduced, and the costs associated with higher prices increase, creating a difficult situation for host governments.

Fuel subsidies occur whenever the fuel price is less expensive than the substitution of alternative fuels. As oil production declines, the efficiency of other energy sources increases, which results in a decrease in fuel subsidies. These subsidies are particularly important in China and India where the demand for oil production, while increasing, remains relatively low compared to other economies. However, as production declines, the subsidies may be required to keep domestic production below capacity levels, which may further reduce the cost of oil to consumers.

Some “petro-states” receive over 70% of their government revenue from oil production. As oil production declines, the cost of providing services such as education and health care increases. The resulting fiscal pressures can lead to social unrest in these countries.

2. Global Peak Oil Forecasts

King Hubbert applied a logistic equation to forecast future Lower 48 oil production which he was inspired by D'Arcy's model. He subsequently revised his forecast when challenged by the USGS. (Figures 1 and 2) However, in mid-2009, he applied the same logistic function to production generated by the USGS forecast (Figures 3 and 4). Hubbert forecasted that oil production would peak in the mid-1970s, followed by a decline. The main assumptions he applied to his model were: (1) the volume of undiscovered oil resources, (2) a constant rate of discovery yielding a constant rate of production, and (3) the discovery of the last known oil reservoir. In most cases, Hubbert's logistic analysis has been applied using similar assumptions.

3. National Oil Production Forecasts

Among forecasts there are also discrepancies regarding the timing of peak oil production. Some forecasts, including D'Arcy's model, refer to a "peak year" or "peak period," while other forecasts use "peak oil" to refer to a "resource potential" or "energy potential" (Figures 5 and 6). Some forecasts do not distinguish between "peak oil" and "peak production." "Peak oil" is often used to refer to the point at which the production of oil resources has reached a maximum, while "peak production" refers to the point at which production has declined to zero. However, these terms are not always used consistently, and their meaning may vary depending on the context.