

Support Renewable Energy Development in Hong Kong

By
Belinda Wong-Swanson¹

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A report "*Resources to Reserves -- Oil and Gas Technologies for the Energy Markets of the Future*, 130 pages, ISBN 2-64-10947-1 (2005)"² just released by the International Energy Agency has a relatively optimistic view of the continued availability of oil and gas for the next twenty-five years. According to the IEA report, oil demand will grow by more than 50% between 2002 and 2030 and that gas demand will double. There is potentially more oil available than all the world's current reserves combined. The key is that technological advances are needed to turn these potential resources into proven reserves. The report concludes that this could be done in the future at oil prices significantly below current levels.

Until then, the demand for fossil fuel, especially gas and oil, will continue to grow and the prices for them will continue to rise. Figure 1 shows the price trends for petroleum oil products and crude oil prices from September 2002 through September 2005. Even if one is not concerned about global warming, or air and water pollution from using fossil fuel, the impact of fuel cost on personal finances and on the overall economy should encourage one to practice energy conservation measures, and to support the development and use of renewable energy technologies.

Hong Kong has experienced economic and population growth in the past decades. Energy is required to fuel this growth. Figure 2 illustrates the relative growth of energy consumption in Hong Kong over a 30-year period. The total energy consumption (yellow curve) in 1999 was over 5 times that in 1971. To be sure, there was a simultaneous increase in population and economy during the same period. When the population was taken into account, energy use on a per capita basis (blue curve) still showed an increase by about 2.5 times. On a gross domestic product (GDP) basis, the energy consumption (green curve) actually was less than the 1971 level. This is quite encouraging, as it shows that Hong Kong is quite energy efficient in running its economic activities. Nevertheless, an economic downturn coupled with continued rise in oil-prices could change this to a growing trend as well.

Hong Kong depends almost entirely on fossil fuels such as coal, oil and gas for its energy needs. This can be seen in Figure 3. From 1972-2002, 100% of Hong Kong's energy needs were provided by coal (purple in the chart), oil (blue) and gas (green). The total amount of fossil fuel was almost 16 thousand metric ton of oil equivalent (ktoe) in 2002. [One metric ton of oil equivalent is defined as 41.868 gigajoules, the amount of energy contained in 1 metric ton of crude oil.] It is important for Hong Kong to reduce this dependency on fossil fuel so that rising oil and gas prices will not restrict its economic growth.

It is very exciting that Hong Kong has begun to invest in a variety of renewable energy technologies. Some of the projects include: the solar photovoltaic system at the Wanchai Towers, the sludge-to-biogas system at the Shatin Sewage Treatment Works, and the wind turbine demonstration project at Lamma Island. Given Hong Kong's limited open land, and relatively low quality solar availability, wind and solar may not be the best solutions to meet all Hong Kong's energy future.

Nevertheless, the citizens of Hong Kong should encourage the Hong Kong government, the power & water authorities and corporations to continue to identify appropriate renewable technologies to meet the different energy needs of Hong Kong. This would enable Hong Kong to maintain its economic growth without being threatened by rising oil and gas prices. At the same time, Hong Kong will be doing its part to reduce air pollution and waste generation.

¹ Dr. Wong-Swanson is the founder of Innov8 LLC, a technical consulting company in Santa Fe, New Mexico, USA. URL: www.innov8llc.com. For further discussions regarding this and previous articles that appeared in S-E-E Magazine, please email to info@innov8llc.com

² *Resources to Reserves -- Oil and Gas Technologies for the Energy Markets of the Future*, 130 pages, ISBN 2-64-10947-1 (2005). See press release at http://www.iea.org/Textbase/press/pressdetail.asp?PRESS_REL_ID=159

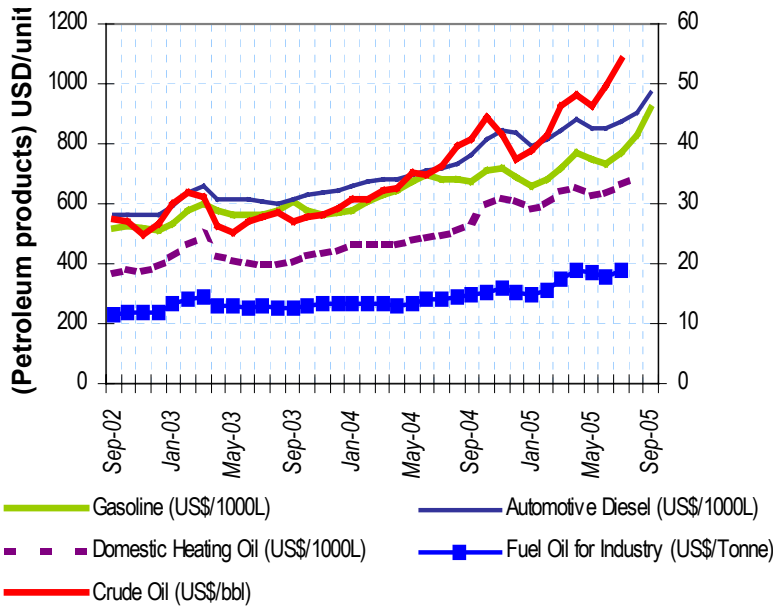


Figure 1. End-user petroleum product prices and average crude oil import cost as of September 2005.³

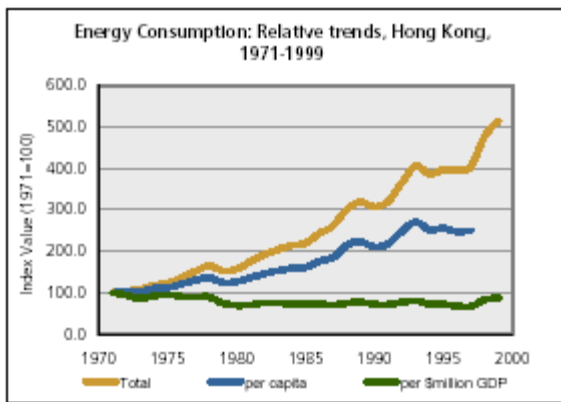


Figure 2. Energy consumption increased by about 5 fold in Hong Kong over 30 years, from 1971-1999⁴

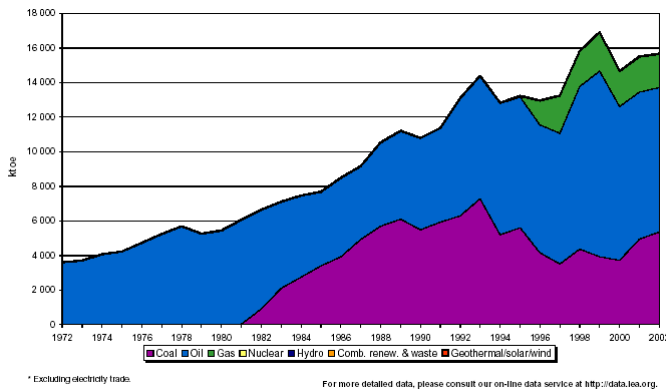


Figure 3. Amount of fuel, in ktoe, supplied from coal (purple), oil (blue) and gas (green) for Hong Kong from 1972 - 2002.⁵

³ <http://www.iea.org/Textbase/stats/surveys/mps.pdf>

⁴ World Resource Institute. Earth Trends Country Profiles; Energy and Resources - Hong Kong. <http://earthtrends.wri.org>

⁵ Evolution of Total Primary Energy Supply from 1972 to 2002 for Hong Kong, IEA Energy Statistics. <http://www.iea.org/statist/index.htm>