NATURAL GAS’ FUTURE AS A VERSATILE GLOBAL COMMODITY

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DR. CAREY W. KING
Research Scientist and Assistant Director, Energy Institute, The University of Texas at Austin
Estimated U.S. Energy Consumption in 2016: 97.3 Quads

Solar 0.567
Nuclear 6.42
Hydro 2.48
Wind 2.11
Geothermal 0.23
Natural Gas 26.5
Coal 14.2
Biomass 4.75
Petroleum 36.3

Electricity Generation 37.6
Net Electricity Imports 0.08
Residential 11.0
Commercial 9.92
Industrial 24.5
Transportation 27.9

Deforestation 66.4

Energy Services 30.6

Note: This data is based on EIA's Annual Energy Review 2010. It is possible that the total energy consumption may not add up to 97.3 Quads due to rounding and data limitations.
Petroleum is as or more versatile than NG, but …

… it costs more because it can be stored in higher densities (e.g., your car’s gas tank).
Generation Technology with lowest LCOE

Energy Institute: http://calculators.energy.utexas.edu/
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What are the LCOEs across the U.S? ($/MWh)

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Low delivered NG prices rely on infrastructure
New investment landscape:
wind + solar 60% of investment

Investment, by technology, 2017-2040

($ trillion - 2016 real)

Wind: $3.3
Solar: $2.8
Nuclear: $1.4
Hydro: $1.1
Gas: $0.8
Coal: $0.7

Source: Bloomberg New Energy Finance
New investment landscape: wind + solar 60% of investment

Source: Bloomberg New Energy Finance
“Consider GE's $9.5 billion acquisition of Alstom's power business, which makes coal-fueled turbines used by power plants.”

“For GE, the deal represented a doubling down on fossil fuels, …”

Will Australian grid go battery instead of NG for renewable integration (& export NG)?
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“Normal” Summer day: selling at 1000 $/MWh, charging at 10 $/MWh

https://electrek.co/2018/01/23/tesla-giant-battery-australia-1-million/
Will Australian grid go battery instead of NG for renewable integration (& export NG)?

Lack of grid flexibility: charging at -1000 $/MWh

https://electrek.co/2018/01/14/teslas-massive-battery-in-australia-was-paid-up-to-1000-mwh-to-charge-itself/
Carey W. King, Ph.D.

Research Scientist & Assistant Director, Energy Institute
Jackson School of Geosciences
Lecturer, McCombs School of Business & LBJ School of Public Affairs

careyking@mail.utexas.edu

careyking.com  |  @CareyWKing