June 18, 2012

Notes from Conference
New Directions for US Energy Policy: A Hamilton Project Forum at Stanford University
Held June 13, 2012

Overview of Energy Landscape

- Global energy profile: 80% oil/gas/coal; up to 13% renewables (2009)—of renewables, less than 2% comes from wind/solar (biggest source by far is biomass).

Energy by power source 2008[18]		
	TWh	%
Oil	48 204	33.5%
Coal	38 497	26.8%
Gas	30 134	20.9%
Nuclear	8 283	5.8%
Hydro	3 208	2.2%
Other RE*	15 284	10.6%
Others	241	0.2%
Total	143 851	100%

- Global demand for oil continues to climb, but demand in USA is flat. In USA, more use of natural gas; increasing solar and wind (but still extremely small as percentage of total energy mix).

Roundtable #1: The Future for US Natural Gas

- USA to remain reliant on oil for at least next 25 years. Energy efficiency remains biggest opportunity to drive usage down.

- Domestic use of coal down from 50% to now 30-35%--now about the same level as use of natural gas. Use of natural gas will continue to climb. Given recent discoveries, potential as primary fuel for transportation—significant infrastructure hurdles to overcome to move into mainstream.

- Natural gas price down to $2.50—significant domestic/North American shale reserves and other new domestic discoveries. Gas production from shale expected to double in the next 40 years. Biggest concern is environmental impacts. Not well understood; related concern that lots of small companies are getting in the business of shale extraction. Those companies may be

"gone" before environmental impacts are fully understood. Biggest issue is chemically treated water. Panel proposed the need for bonding to ensure environmental compliance (at both state and federal level). Also discussion around need for increased regulation and "boots on the ground" to ensure compliance.

- Gas prices low due to lack of externalities in cost. Several speakers suggested need to capture full cost of domestic extraction and production.

Roundtable #2: Investing in Clean Energy Innovation

- Energy efficiency is first obvious focus: lighting, building materials, smart technology. Lots of innovation on the horizon and making great progress.

- Change in energy supply and increased renewables will require rebuilding of the grid (lots of conversation about "micro-grids" based on both renewable energy supply/distributed generation and cyber-security concerns).

- Need to understand the size and investment of the energy sector. Innovation will happen "at the fringes" in new technology companies, while the IOUs focus on providing safe, reliable energy 24x7. Batteries continue to be critical technology—progress continuing but still not fully in our grasp.

- Volatility of gas pricing makes it extremely difficult to plan. Technology for gas generation continues to improve—provides for flexible use and supports more stable platform when combined with renewables.

Roundtable #3: America's Energy Future

- Federal government will not be able to lead. States (like California) will have to lead; Fed can help with aligned incentives.

- US Military has been and can continue to be a key partner in states where they have installations. Military is moving fast on renewables, energy efficiency, and distributed power. Recent wars have required they use all these tools.

- Southeast states are not on board; many other states are using both energy efficiency tools and renewables.

- Given new discoveries on domestic gas supplies, energy independence could happen in the next 10-20 years (or sooner). This would have worldwide implications for our relationship with the middle east. USA could, in fact, become a potential exporter of natural gas (although there was a lot of discussion on pros and cons for this).

- Climate Change: (Note—this was the last topic area of the conference and there was a markedly somber tone to this conversation).
    - There was consensus among the panelists that something real is happening on climate change. Increasingly, extreme weather conditions cannot be ignored.
    - One panelists suggested that our current situation is like the USA before WWII—where we knew something was happening but refused to engage until we were actually attacked.
    - People cannot see climate change on a daily basis. Until they do, or there is some pivotal event, Americans will not respond.
    - There was a sense that many people in the USA "get" climate change, but that the elected officials do not (or refuse to). Grassroots democracy will have to drive change.
    - On a global basis (or even nationally), do not expect to see any serious movement on climate change negotiations. Special interests are holding this up nationally and globally ("do not underestimate the response of incumbents").