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Panel Discussion – The Energy Economics of Falling Oil Prices, Fracking and Renewables

Anne E. Hoskins, Commissioner
Maryland Public Service Commission

Disclaimer: Views expressed are my own and do not necessarily reflect those of the Maryland Public Service Commission
Historical Context: The 1970s


Elkton, Maryland, 1973

President Carter at the White House, 1979
Historical Context: The 1980s and 1990s

• “Historically, lower fossil fuel prices have impacted renewable energy resources like kryptonite . . . in the 1980s and 1990s, when nascent solar, wind and geothermal markets in California keeled over as North America suddenly became awash in cheap oil and natural gas.” *The Guardian*, 2014
Natural Gas Prices and their Impact on Regulation

[Graph showing Henry Hub Natural Gas Spot Price from 1998 to 2014]
As Gas Prices Decline...

- Increasing Energy Efficiency goals: 2% of gross energy sales from 2013 baseline
- Increasing investments in Transmission and Distribution Systems
- Increasing Renewable Portfolio Standards:
  
<table>
<thead>
<tr>
<th>Year</th>
<th>Solar</th>
<th>Other Tier I</th>
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<tr>
<td>2006</td>
<td>0.00%</td>
<td>1.00%</td>
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<tr>
<td>2010</td>
<td>0.025%</td>
<td>3.00%</td>
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<tr>
<td>2015</td>
<td>0.50%</td>
<td>10.00%</td>
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<td>2020</td>
<td>2.00%</td>
<td>16.00%</td>
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<td>2022+</td>
<td>2.00%</td>
<td>18.00%</td>
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- Mixed impacts on competitive generation markets (natural gas vs. nuclear vs. coal). Regulators need to ensure security of supply for reliability.
If gas (and electricity) prices go up . . .

• Customer rates could increase significantly due to continued T&D network investment cost recovery and increasing commodity prices.
  - Will existing safety net programs be sufficient to ensure access to essential electricity and gas services by lower income customers or will new rate-making methods be necessary?
  - Will the increased rates drive customers off the grid and if so, how will the long term T&D maintenance costs be recovered?

• Increased demand for renewables and other DG, including customer-generated energy like solar PV, Combined Heat & Power and Energy Efficiency.

• Potentially mixed impacts on State carbon reduction objectives (gas vs. coal; and gas as a bridge fuel).
The Maryland Climate Change Commission recently proposed extending the State’s Greenhouse Gas goal – from 25% reduction by 2020 to a **40% reduction by 2030** (2006 baseline).
In CA the ramp-up in the evening hours – when solar PV fades but load is still high – is a key driver of capacity needs, which is currently being met by natural gas generation facilities. But if battery storage can fill that gap . . .
Renewables + Storage = less natural gas?

• High hopes for energy storage paired with renewables – especially solar PV – where renewable penetration is high (Hawaii or California)

• Battery storage pilots underway in several states, e.g. Hawaii, California, New York, Oregon