

**UNIVERSITY FACULTY
SENATE MEETING**

DECEMBER 9, 2009

AGENDA

- Call to Order
- UFC Report (8 minutes)
- Discussion of Marcellus Shale Resolution (20 minutes)
- Approval of Minutes (2 minutes)
- Budget update (Financial Policies Committee/Administration) (20 minutes)
- Discussion on Library Task Force Resolution (UFC) (20 minutes)
- Report from Dean of Faculty (5 minutes)
- Good and Welfare (10 minutes)

**UNIVERSITY FACULTY
COMMITTEE REPORT (UFC)**

William Olbricht

December 9, 2009

DISCUSSION OF MARCELLUS SHALE RESOLUTION

Linda Nicholson and Colleagues

December 9, 2009

Proposed Amendment to Marcellus Shale Gas Drilling Resolution

Brought by Faculty Senator:

Linda Nicholson, Molecular Biology & Genetics

WHEREAS, It is estimated that the geologic rock bed known as Marcellus Shale may contain up to several trillion cubic feet of natural gas, and dramatic increases in the price of crude oil have resulted in a tremendous increase in interest and activity relating to natural gas exploration and hydraulic fracturing;

WHEREAS, the natural gas of the Marcellus Shale is not going away (i.e. it is "gas in the bank"), while its rapid extraction via ~~horizontal, "slick water" hydraulic fracture gas drilling~~ [the combined use of horizontal drilling and "slick water" hydraulic fracturing](#) (never before implemented in the state of NY) will require industrial type development that could impact wide areas of land and water; furthermore, EPA studies of the impact of horizontal hydraulic fracture gas drilling are currently underway in areas where this process has a history of use, and DEC regulation of gas drilling in NYS is currently being debated;

WHEREAS, Cornell University is committed to environmental leadership exemplified by the signing of the American University and College Presidents Climate Commitment by President Skorton;

WHEREAS, Cornell University has a great responsibility to preserve and protect its natural resources, water resources, and quality of life for current and future Cornell faculty, staff and students;

WHEREAS, Cornell University is in a position to take a leadership role on the issue of horizontal [drilling combined with](#) hydraulic fracturing of the Marcellus Shale, on sustainability education, and on research in water management, soil health, animal and human health and medicine;

THEREFORE, BE IT RESOLVED, that the Cornell Faculty Senate hereby conveys to the executive administration, including President David Skorton, Provost Kent Fuchs, and the Board of Trustees, our opinion that

1. A moratorium should be imposed on the leasing of Cornell lands for horizontal [drilling combined with](#) hydraulic [fracturing](#) ~~fracture gas drilling~~ until a scientifically informed consensus is reached at federal, state and local levels on the long-term environmental, health, economic and community impacts of this activity, federal and state legislation for adequate regulation of this activity is in place, and the infrastructure is in place to enforce these regulations.
1. An advisory group should be constructed to advise the executive administration on future decisions regarding the leasing of Cornell lands for horizontal [drilling combined with](#) hydraulic [fracturing](#) ~~fracture gas drilling~~ , and its recommendations should be reported and made widely available to the Cornell community. This group should be composed of experts in areas such as fracture mechanics of shale, watershed and aquifer dynamics, analytical chemistry, environmental protection law and policy, water law and policy, sociology and community development, climate change, climate policy, renewable energy technology, energy economics, geologic faults of New York state, and other subjects as deemed necessary to gain an in-depth understanding of the potential impacts of hydraulic fracture gas drilling, and of alternatives for sustainable energy production. Undergraduate and graduate student representatives should also be included.

Marcellus Shale Gas Drilling Resolution

Brought by Faculty Senators:

Linda Nicholson, Molecular Biology & Genetics

Peter Hinkle, Molecular Biology & Genetics

Clare Fewtrell, Department of Molecular Medicine

Ted Clark, Department of Microbiology and Immunology

Ron Booker, Department of Neurobiology and Behavior

Elizabeth Sanders, Government

While gas drilling has been performed in the state of New York for decades, the ***combination of horizontal drilling and hydraulic fracturing has not been previously implemented*** in NYS.



serious new concerns:

- enormous volumes of fresh water consumed
- flowback water must be processed as toxic waste.

Source: J. Henry Fair Dimock PA

“Slick Water” Hydraulic Fracturing



- fracturing with large volumes of high pressure water = hydrofracturing
- sand is added to keep new fissures open
- To suspend sand in water, chemicals* are added (~1% of total vol.)
- 364+ water trips per well (3 – 5 million gal)

Source: Chesapeake Energy 2008 (Estimate Denton TX Oil & Gas Task Force)
Hydrofrac'ing a Marcellus Well, West Virginia

***PROPRIETARY formulation, including known carcinogens, endocrine disrupters, benzene, toluene, xylene and formaldehyde**

Gas Industry Exemptions

- Clean Drinking Water Act
- Clean Water Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Clean Air Act

EPA testing of gas drilling impacts on water and air was not required and was not performed

What do we know?

- The gas industry has only *recently disclosed **some of the toxic chemicals*** used in slick water fracturing. *Time is now needed* to test for impacts on aquifers, water wells, and other sources of drinking water where this process has been employed.
- In response to complaints, the EPA recently tested water wells near gas drilling sites in Pavillion, Wyoming: 11 of 39 (**28%**) of the water wells tested were *contaminated with substances used in nearby gas drilling*.
- Hydraulic fracturing is the *suspected source of impaired or polluted drinking water* in *Pennsylvania, Texas, Colorado, and Wyoming*.
- *Hundreds of cases of water impairment or pollution related to the oil and gas industries in NY state* have been documented by the DEC, but a majority have not been properly remediated (www.toxicstargeting.com).

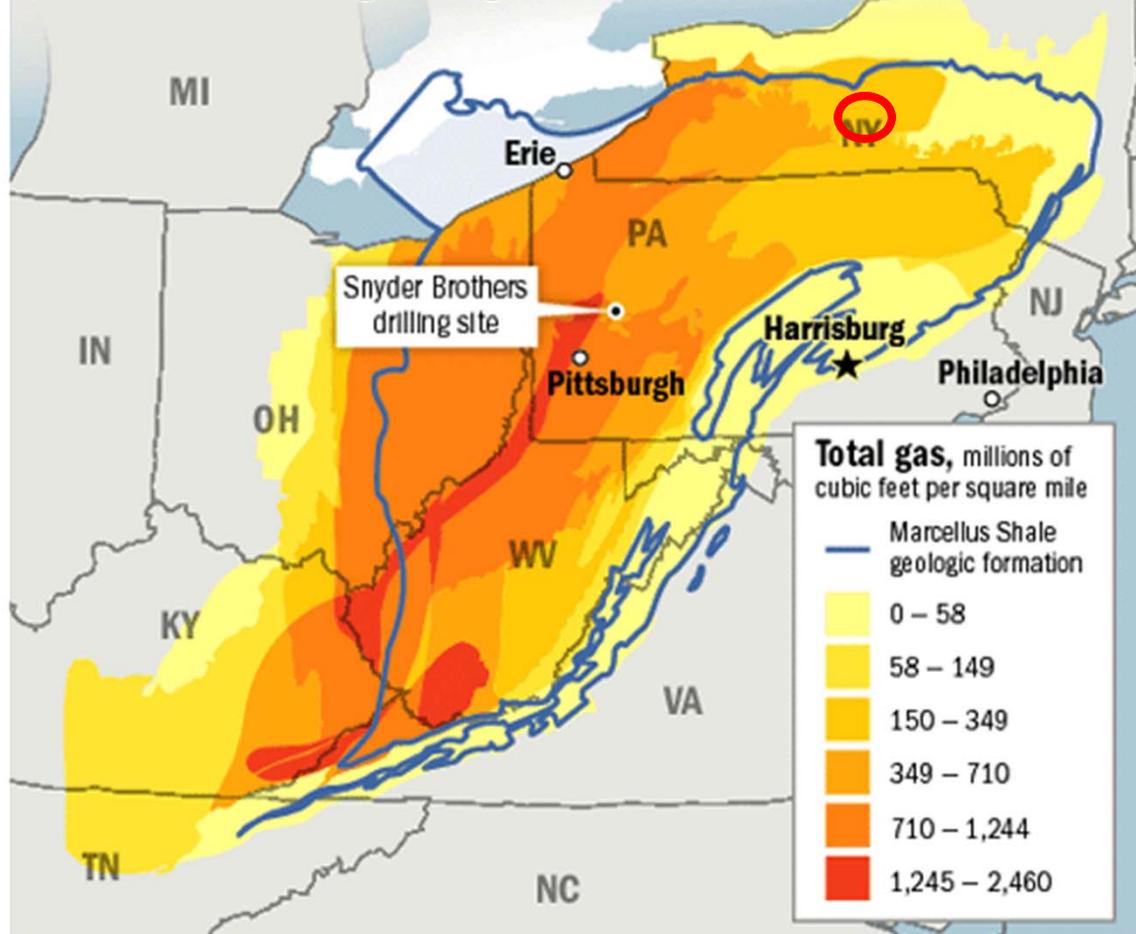
Will DEC regulations ensure safety, and can NYS enforce them?

Legislation in the Works

- On June 9, 2009, the ***Fracturing Responsibility and Awareness of Chemicals (FRAC) Act (S. 1215)*** was introduced in the US Senate and was referred to the Committee on Environment and Public Works in the US Senate. This ***pending bill*** would ***amend the Safe Drinking Water Act to repeal the exemption for hydraulic fracturing*** by the gas industry.
- On Oct. 30, 2009, President Obama signed into law the ***Interior, Environment and Related Agencies fiscal year (FY) 2010 Appropriations Bill (H.R. 2996)***. The Conference Report of this bill includes a request that the EPA re-examine the impact of hydraulic fracturing on drinking water by performing a scientifically robust and peer-reviewed study *“using a credible approach that relies on the best available science.”* This requested study will require time to complete.
- If the ***pending NYS DEC draft Supplemental Generic Environmental Impact Statement*** is approved, the current moratorium on issuing permits for “slick water” hydraulic fracturing of horizontal wells in NYS will be lifted.

Untapped riches ?

The Marcellus Shale formation, which stretches all through the Appalachians, holds as much as 516 trillion cubic feet of natural gas. Current, high energy prices have made drilling for the gas attractive.



Source: U.S. Bureau of Land Management, Geology.com, Catskillmountainkeeper.org

Ed Yozwick, Keith McCafferty/Post-Gazette

http://www.post-gazette.com/images4/20080720Marcellus_Shale_map.gif

So How Much Can Marcellus Gas Help U.S. Supplies??

Natural Gas Consumption by End Use

(Million Cubic Feet)

Area: Period:

[Download Series History](#) [Definitions, Sources & Notes](#)

Show Data By: Data Series Area

	2003	2004	2005	2006	2007	2008
Total Consumption	22,276,502	22,388,975	22,010,596	21,684,641	23,047,229	23,206,390
Lease and Plant Fuel	1,122,283	1,097,904	1,111,517	1,141,977	1,198,648	1,283,846
Lease Fuel						
Plant Fuel						
Pipeline & Distribution Loss	66,762	66,767	66,825	66,275	62,555	62,194
Volumes Delivered to Consumers	20,562,727	20,724,883	20,315,054	19,958,451	21,225,688	21,295,350
Residential	5,079,351	4,868,797	4,826,775	4,368,466	4,717,311	4,865,691
Commercial	3,179,493	3,128,972	2,998,920	2,832,030	3,017,105	3,119,988
Industrial	7,150,396	7,242,837	6,597,330	6,512,115	6,624,846	6,618,631
Vehicle Fuel	18,271	20,514	22,884	23,739	25,016	30,094
Electric Power	5,135,215	5,463,763	5,869,145	6,222,100	6,841,408	6,660,947

That's 23 TRILLION Cubic Feet

http://tonto.eia.doe.gov/dnav/ng/ng_cons_sum_dcu_nus_m.htm

slide courtesy of Prof. Tony Ingraffea

Total estimate of NYS Marcellus gas

- 500 trillion cubic feet total
- 10% can be extracted via current technology
- 15% of this is in Southern Tier of NYS
 $(500)(0.10)(0.15) = 7.5$
- **7.5 trillion cubic feet TOTAL**

This is **1/3 of 1 year** of US natural gas consumption. **TOTAL.**

WHEREAS, It is estimated that the geologic rock bed known as Marcellus Shale may contain up to several trillion cubic feet of natural gas, and dramatic increases in the price of crude oil have resulted in a tremendous increase in interest and activity relating to natural gas exploration and hydraulic fracturing;

WHEREAS, the natural gas of the Marcellus Shale is not going away (i.e. it is "gas in the bank"), while its rapid extraction via horizontal, "slick water" hydraulic fracture gas drilling (never before implemented in the state of NY) will require industrial type development that could impact wide areas of land and water; furthermore, EPA studies of the impact of horizontal hydraulic fracture gas drilling are currently underway in areas where this process has a history of use, and DEC regulation of gas drilling in NYS is currently being debated;

WHEREAS, Cornell University is committed to environmental leadership exemplified by the signing of the American University and College Presidents Climate Commitment by President Skorton;

WHEREAS, Cornell University has a great responsibility to preserve and protect its natural resources, water resources, and quality of life for current and future Cornell faculty, staff and students;

WHEREAS, Cornell University is in a position to take a leadership role on the issue of horizontal hydraulic fracturing of the Marcellus Shale, on sustainability education, and on research in water management, soil health, animal and human health and medicine;

THEREFORE, BE IT RESOLVED, that the Cornell Faculty Senate hereby conveys to the executive administration, including President David Skorton, Provost Kent Fuchs, and the Board of Trustees, our opinion that

1. A moratorium should be imposed on the leasing of Cornell lands for horizontal hydraulic fracture gas drilling until a scientifically informed consensus is reached at federal, state and local levels on the long-term environmental, health, economic and community impacts of this activity, federal and state legislation for adequate regulation of this activity is in place, and the infrastructure is in place to enforce these regulations.
1. An advisory group should be constructed to advise the executive administration on future decisions regarding the leasing of Cornell lands for horizontal hydraulic fracture gas drilling, and its recommendations should be reported and made widely available to the Cornell community. This group should be composed of experts in areas such as fracture mechanics of shale, watershed and aquifer dynamics, analytical chemistry, environmental protection law and policy, water law and policy, sociology and community development, climate change, climate policy, renewable energy technology, energy economics, geologic faults of New York state, and other subjects as deemed necessary to gain an in-depth understanding of the potential impacts of hydraulic fracture gas drilling, and of alternatives for sustainable energy production. Undergraduate and graduate student representatives should also be included.

APPROVAL OF MINUTES

DECEMBER 9, 2009

BUDGET UPDATE

**STEVE POPE, FPC CHAIR
FINANCIAL POLICIES COMMITTEE**

December 9, 2009

Financial Policies Committee

- Meets every two weeks
- Paul Streeter
 - Interim Vice President for Planning & Budget
 - (Carolyn Ainslie – 9/2008)
 - (Elmira Mangum – 2/2010)
- Administration shares confidential information
- Budget Task Force
 - 4 meetings
- **FY 2011 budget (2010-2011)**
 - **December 2, 4:45-6:50 p.m.**
- Part-Time Appointments for Faculty
 - December 17
- Charles Walcott, NB&B, CALS
- Donald Campbell, Astron., A&S
- Ronald Ehrenberg, ILR
- William Lesser, AEM, CALS
- David Lewis, City & Reg. Plan., AAP
- Stephen Pope, MAE, Engr.
- Donald Rutz, Entomology, CALS
- Charles Seyler, ECE, Engr.
- Donald Smith, Clinical Sciences, Veterinary Medicine
- Peter Wolczanski, Chem. & Chem. Biology, A&S
- Bill Fry, Ex Officio
- Paul Streeter, Ex Officio

Major Budget Factors

(2009-2010 Ithaca Campus)

- Revenues: \$1,867M
 - **38% Tuition & fees**
 - 20% Sponsored programs
 - **12% Endowment**
 - 9% NY State
- Expenditures
 - **55% Salaries**
 - 16% Financial aid
- Proposal for 2010-2011

FY 2011 Budget Timetable

- December 2009 – review preliminary major assumptions with Trustee Finance Committee
- January 2010 –Trustee action on major assumptions (tuition, SIP, endowment payout)
- March 2010 – FY11 budget allocations and adjustments to colleges/units
- May 2010 – Trustee approval of Operating & Capital Budget

BUDGET UPDATE

FACULTY SENATE

December 9, 2009

David Harris

Deputy Provost

Budget Update

Goal for today:

Address concerns about the deficit and cost-cutting strategies

Budget Update

Apparent inconsistency between:

1. Expectation of solving the vast majority of our budget challenge through administrative cost savings; and
2. Proposals to save money through such academic area changes as closing libraries and reducing faculty lines in some units

Budget Update

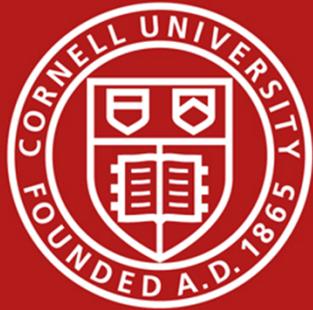
Explanation

1. Context for Task Force Reports
2. Remaining Deficit
3. Two Goals of Reimaging Cornell
4. Priorities and Constrained Resources

Budget Update

Looking forward, we will work with deans and faculty to identify academic area actions that will:

- Have a positive budget impact and little or no negative impacts on our academic mission, and
- Position Cornell for future excellence



Cornell University

We have completed the diagnostic and are about to embark on the solution design phase

We're here

5 months

0-6 months

3-36 months



Diagnostic

Detailed
solution design

Execution

- Identify and prioritize opportunities to reduce cost

- Develop detailed implementation plans to capture value

- Implement workstreams and drive change in organization



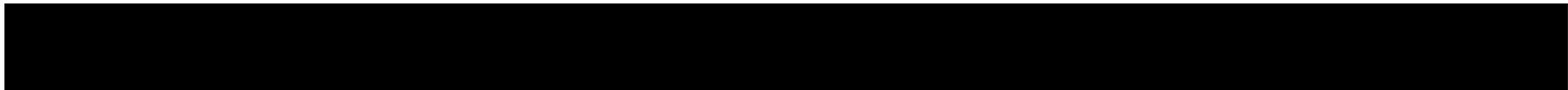
What to do



How to do it

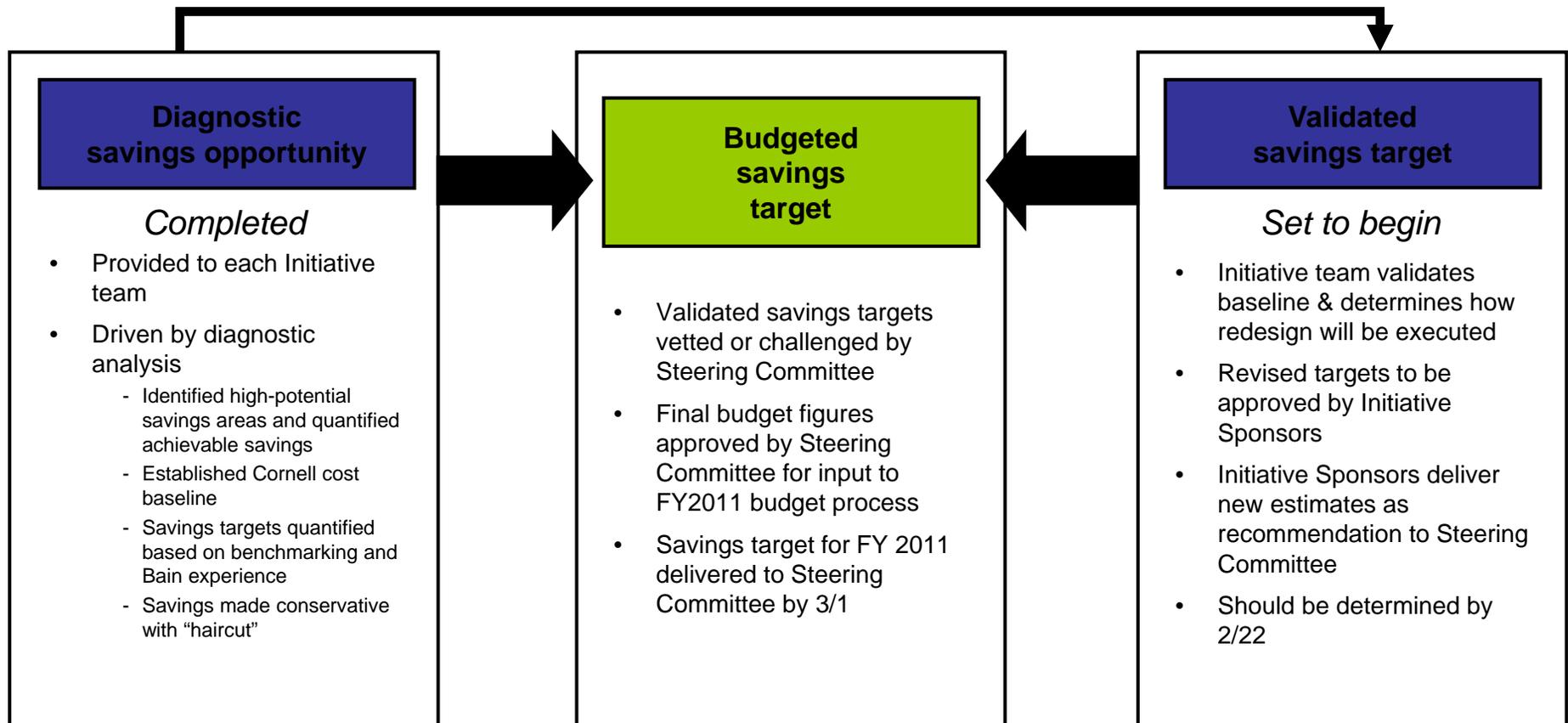


Do it!



Refined set of savings targets will result from redesign analysis

Diagnostic results provide savings target guidance



**DISCUSSION ON LIBRARY
TASK FORCE RESOLUTION
(UFC)**

Eric Cheyfitz

December 9, 2009

UFC RESOLUTION ON LIBRARY TASK FORCE REPORT

WHEREAS, the by-laws of Cornell University recognize that the faculty has the function “to consider questions of educational policy which concern more than one college” (Article XII, Section 3);

WHEREAS, the University Libraries are a major component of a Cornell education in terms of teaching and research;

WHEREAS, the five faculty members of the Library Task Force neither participated in the writing of the Task Force Report nor were their opinions about the report ever solicited by the members of the Task Force who wrote it;

The Faculty Senate recommends that the provost delay any implementation of the Report until the Senate has had time to deliberate its findings and the alternatives at the beginning of the spring semester, 2010.

Endorsed by

The members of the UFC

DEAN OF FACULTY REPORT

Bill Fry

December 9, 2009

GOOD AND WELFARE

December 9, 2009