

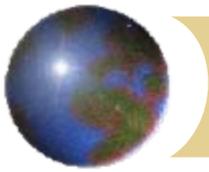


*Next-Generation
Biofuels for the
Chesapeake Bay
Region*

October 2, 2008

*Virginia General Assembly
Joint Retreat*

*Chesapeake Bay
Commission*



Chesapeake Bay Commission

- Created in 1980
- 21 members
- MD – VA – PA
- Helped establish EPA Bay Program
- Partner in the EPA Bay Program & sit on the Executive Council
- Signatory to 3 Agreements & Legislative Leader

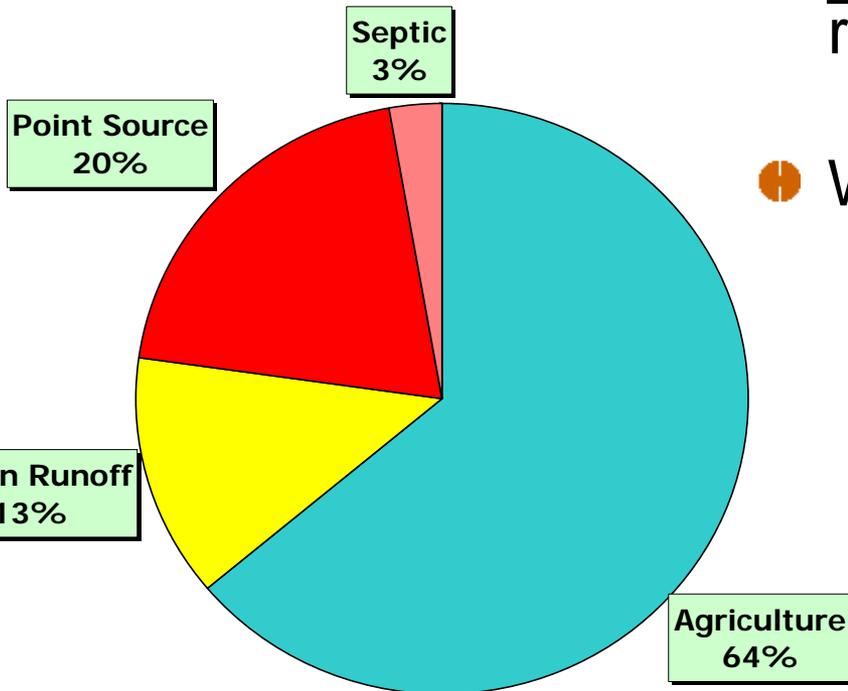


“Policy for the Bay”



Agricultural Tributary Strategy Goals

Bay-wide Tributary Strategy Commitments for Achieving Nutrient Reductions



- Relying on Agriculture to achieve two-thirds of the needed nutrient reductions.

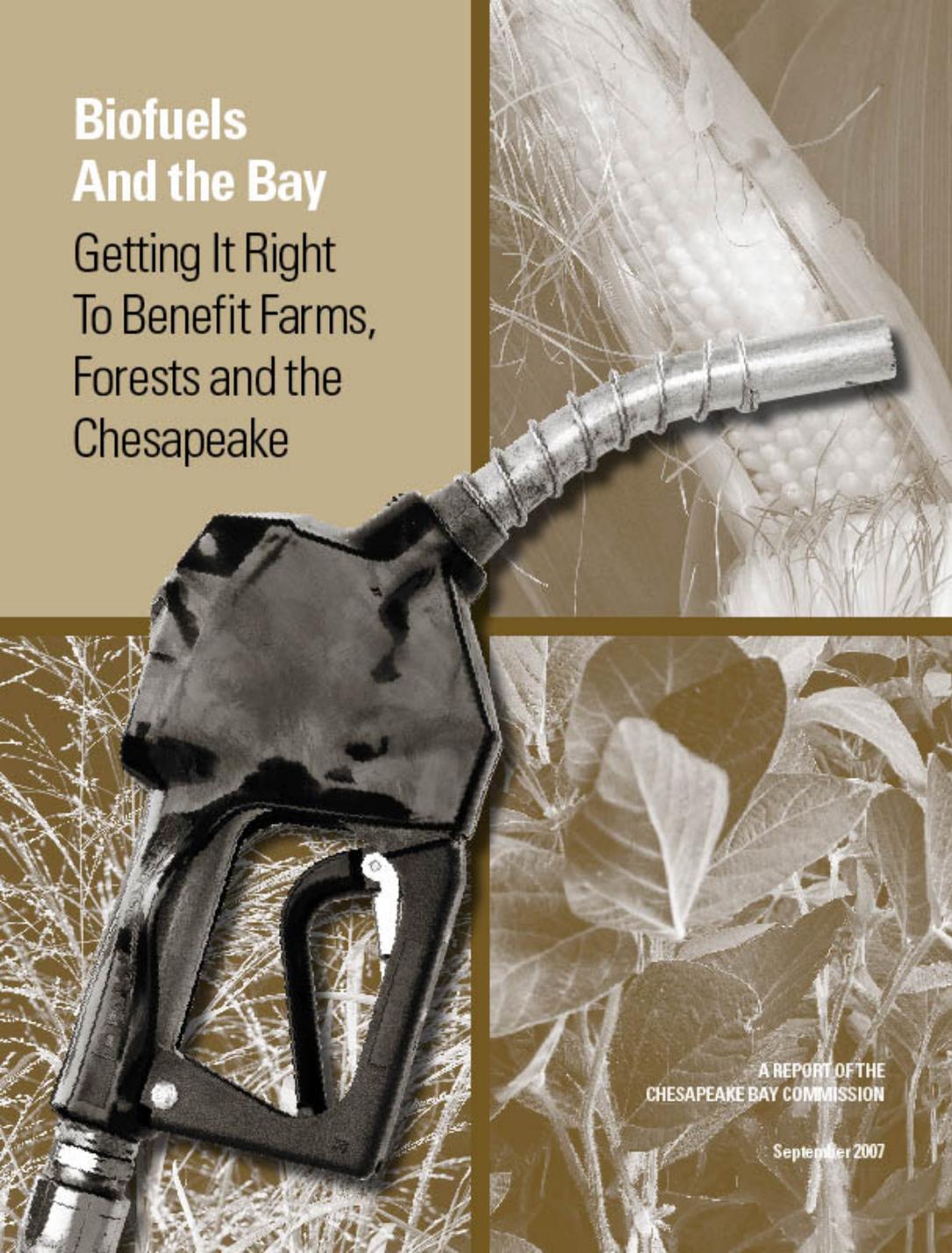
- Why?

- ✓ 5 out of 6 smart investments for short term achievements in nutrient and sediment reductions for the Bay are agricultural practices

(CBC Report: Cost Effective Strategies for the Bay)

Biofuels And the Bay

Getting It Right
To Benefit Farms,
Forests and the
Chesapeake



A REPORT OF THE
CHESAPEAKE BAY COMMISSION

September 2007



A Report of the Chesapeake Bay Commission

September 2007



What are the Feedstocks of Biofuels?



- Natural Oils: animal fat, yellow grease, restaurant waste, algae, and oilseed crops like soy and palm oil.



- Sugars/Starches: corn, sorghum, sugar cane and beets, hulless barley.



- Cellulosic Biomass: perennial grasses, woody biomass, corn stover, wheat and rice straw.



*Bottom-line
Findings*





What is the “Bottom-line” for Biofuels and Water Quality?

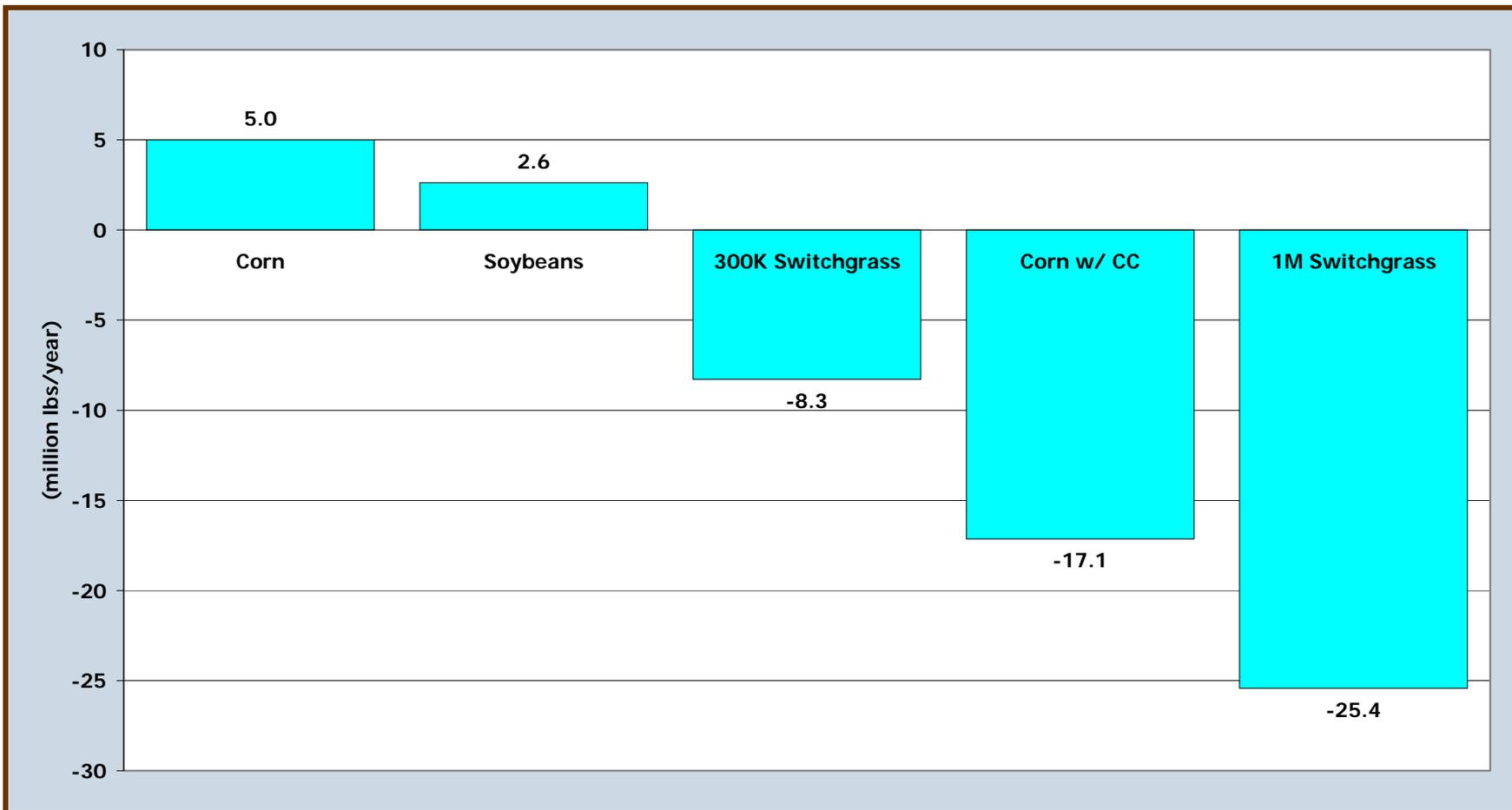


- **Handled right**, biofuels can be a source of substantial permanent new income for farmers and foresters, can help reduce greenhouse gases, and can reduce nutrient pollution to the Bay.
- **Handled wrong**, biofuels can bring economic uncertainty, do little for greenhouse gases, increase the cost of animal feed, and exacerbate nutrient pollution.



Impacts of Alternative Biofuels Scenarios

Watershed Delivered Load, Million lbs. N per year





Recommendations to 2007 Executive Council:

HERE & NOW...and INTO THE FUTURE

- Create long-term, sustainable funding programs for Ag BMP's in every watershed state.
- Provide adequate delivery mechanisms through technical assistance and outreach.

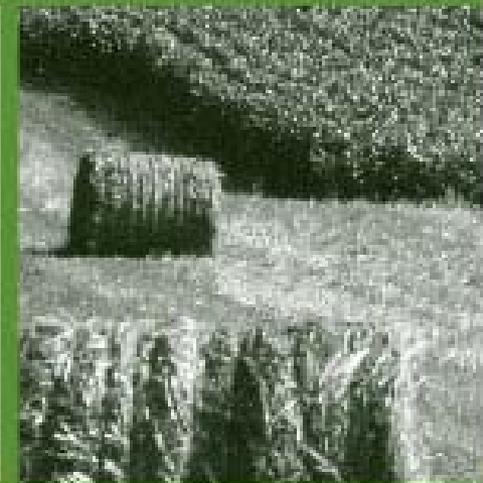
IN 2008 ✓

- Position the Chesapeake region as a national leader in an emerging cellulosic biofuel industry.
- Identify dedicated funds to research and develop the needed technology.
- Hold Cellulosic Biofuels Summit.



Next-Generation Biofuels

Taking the Policy Lead
for the Nation





pennsylvania
STATE OF INNOVATION

PA

*Cellulosic Biofuels
Expert Advisory Panel*

Baseline
Assumptions



Richmond



1. Sustainability

The proper focus for biofuels in the Chesapeake region is **economic and environmental sustainability**, defined as:

- ❖ reduction in nutrient and sediment loadings to the Bay and its rivers;
- ❖ net energy benefits;
- ❖ net lifecycle greenhouse gas reductions;
- ❖ neutrality or benefits re: food security and cost;
- ❖ net social and economic benefit to localities; and
- ❖ no net loss in biodiversity and natural resources.

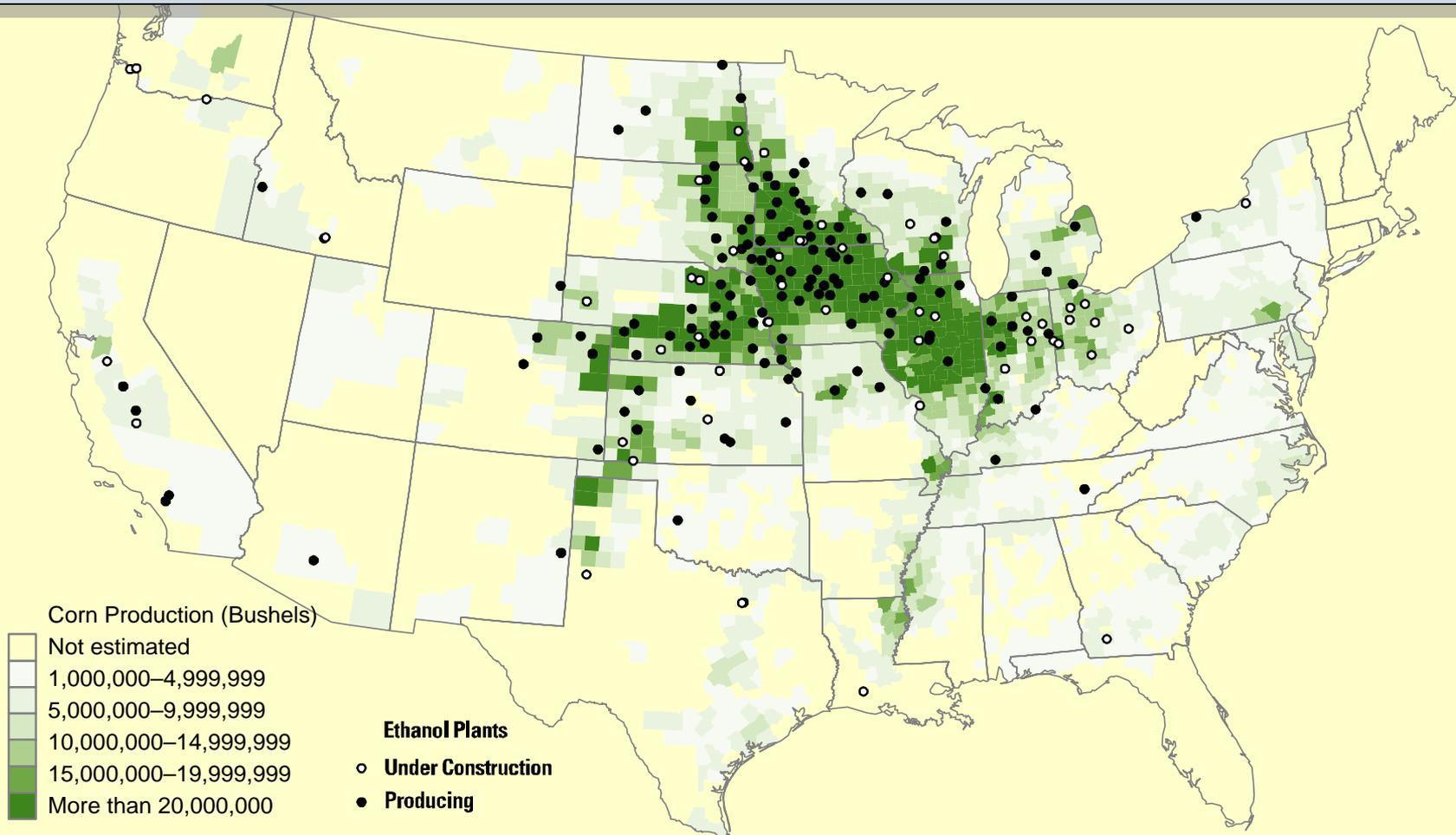


2. Regional Factors Affecting Biofuel Production

- Competing markets
- Access to bio-refineries and petroleum blending;
- Feedstock suitability and availability;
- Low level of regional investment in corn ethanol;
- Poultry and other feed costs;
- Help for forest and farm economies; and
- Reductions in sediment and nutrient loadings and greenhouse gasses.

Choosing Our Future

The Chesapeake Region is the least invested in ethanol of any corn-growing region in the nation.



SOURCE: U.S. Department of Agriculture, National Agricultural Statistics Service, 2007



3. Current Generation Biofuels

- ✿ The future of corn-based ethanol in the region is uncertain;
- ✿ Current U.S. energy policy calls for a doubling of corn-based ethanol production by 2015;
- ✿ Regional corn acreage will likely max out at only 300,000 new acres, double the change from 2006-2007 while yields will rise; and
- ✿ Any regional biofuel refineries will use feedstocks imported from the Corn Belt.

4. Next-Generation Biofuels



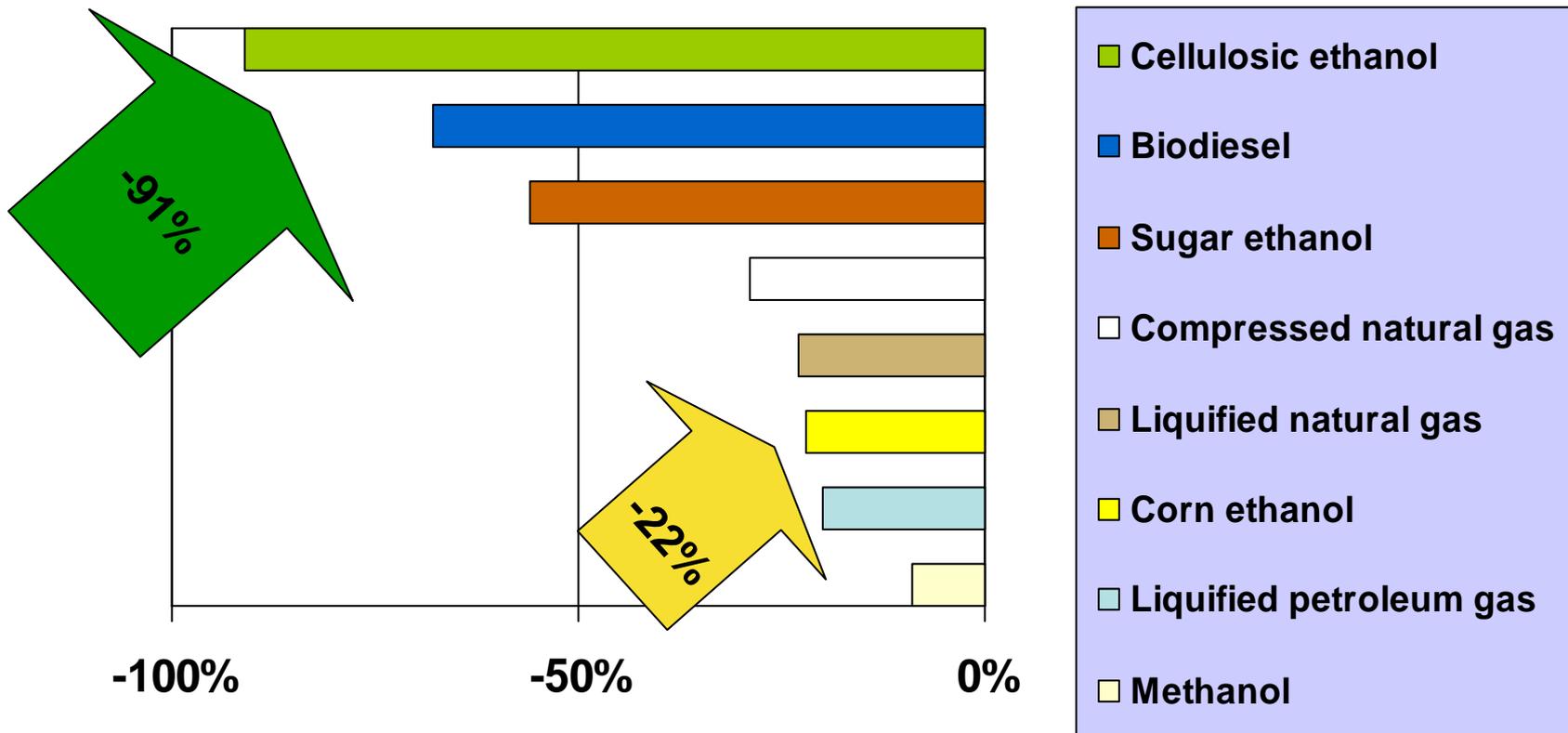
- ➊ Feedstock mix for the region is unclear but could include corn stover, other crop residues, cover crops, switchgrass and other perennial grasses, forest slash, wood residues, fast growing trees, municipal wastes or algae.
- ➋ Key is to make choices that improve environmental conditions while remaining flexible to market and other forces.



5. Environmental Issues

- ❖ The emphasis on regional environmental improvement from biofuel development is on nutrient and sediment reductions to the rivers and the Chesapeake;
- ❖ Other issues include water supply and use, wildlife habitat, invasive plant species, greenhouse gas reductions and net energy benefits.

Comparing Fuels: Greenhouse gas emissions



Estimated change in greenhouse gas emissions if petroleum fuel is replaced by one of these alternatives.



6. Land Use Changes

❁ The potential scale of cellulosic ethanol and other next-generation biofuel development provide challenges and opportunities for:

- ❁ Mined area reclamation;
- ❁ Soil conservation and erosion control;
- ❁ Forest cover;
- ❁ Wildlife management;
- ❁ Use of pasture and underutilized lands; &
- ❁ Reduction of urban sprawl.



Policy Recommendations

Three major subject areas where action is to be focused:

- I. **Feedstocks**: Assuring a reliable and accessible supply of large amounts of biomass grown in the Chesapeake region.
- II. **Natural Resource Protection**: Determining the types of biomass used, where they are grown, and the best management practices needed.
- III. **Marketing and Infrastructure**: Harnessing the region's opportunities for production capacity, distribution of feedstocks and biofuels, and marketing of biofuels and their co-products.



Virginia Policy Recommendations

I. Feedstocks:

- Encourage winter biofuel crops that boost farm income and reduce environmental impacts.
- Target production incentives towards feedstocks that provide multiple benefits.
- Encourage local on-farm use of biomass.

II. Natural Resource Protection:

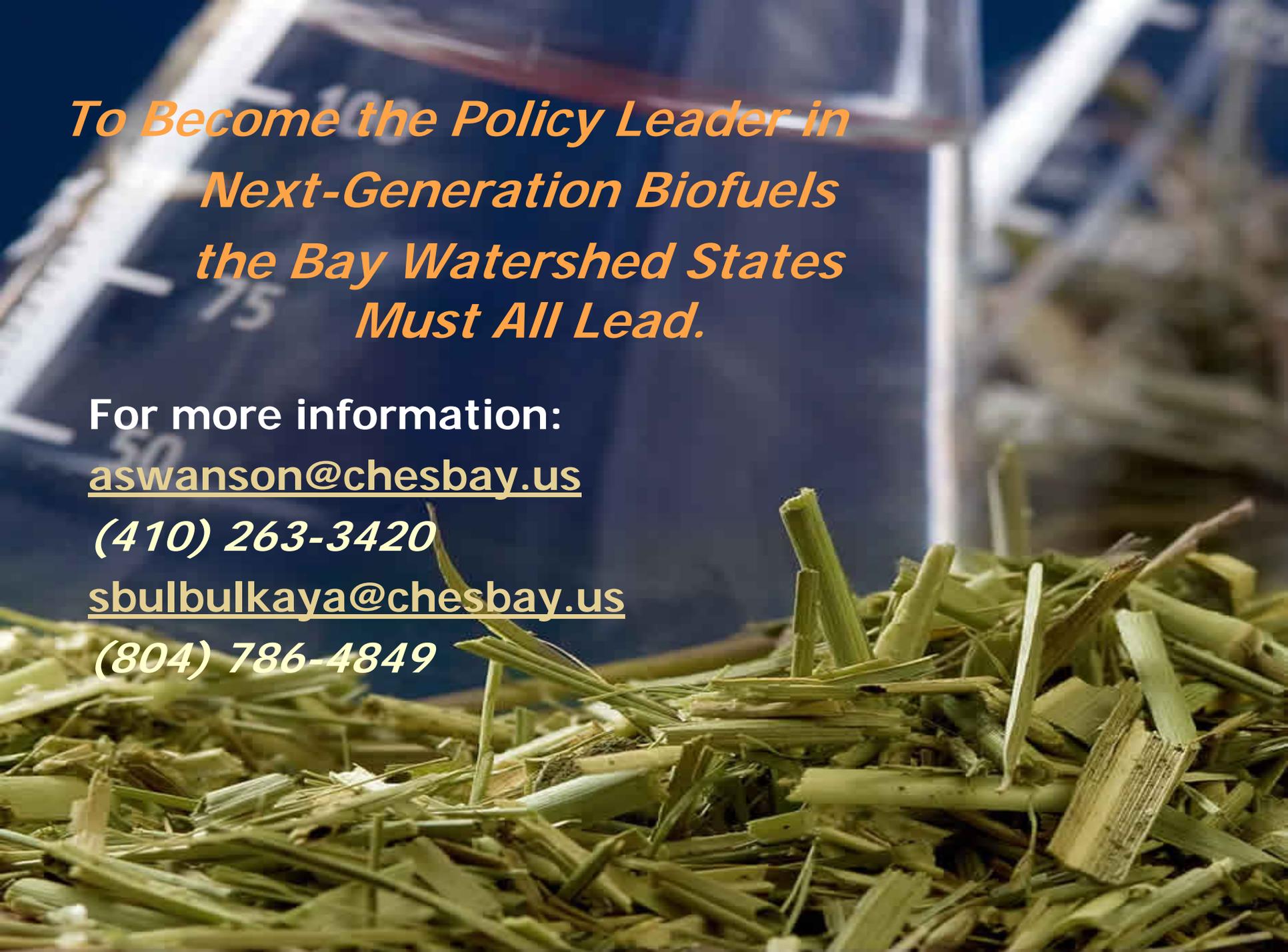
- Establish best management practices for planting and harvesting of biofuel crops, including crop residues and forest biomass.
- Discourage use of invasive non-native feedstocks.
- Encourage sustainable biofuels production on abandoned or underutilized land.



Virginia Policy Recommendations

III. Marketing and Infrastructure

- Make creative use of economic development programs to support development of feedstocks and refining facilities.
- Focus facility support on small-scale, first-stage operations.
- Coordinate regional action to secure funding from the Farm Bill and the Federal Energy Acts.
- Establish a regional strategy to encourage greater use of higher blends of biofuels.



*To Become the Policy Leader in
Next-Generation Biofuels
the Bay Watershed States
Must All Lead.*

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