

The MiniCAM Integrated Assessment Modeling Framework

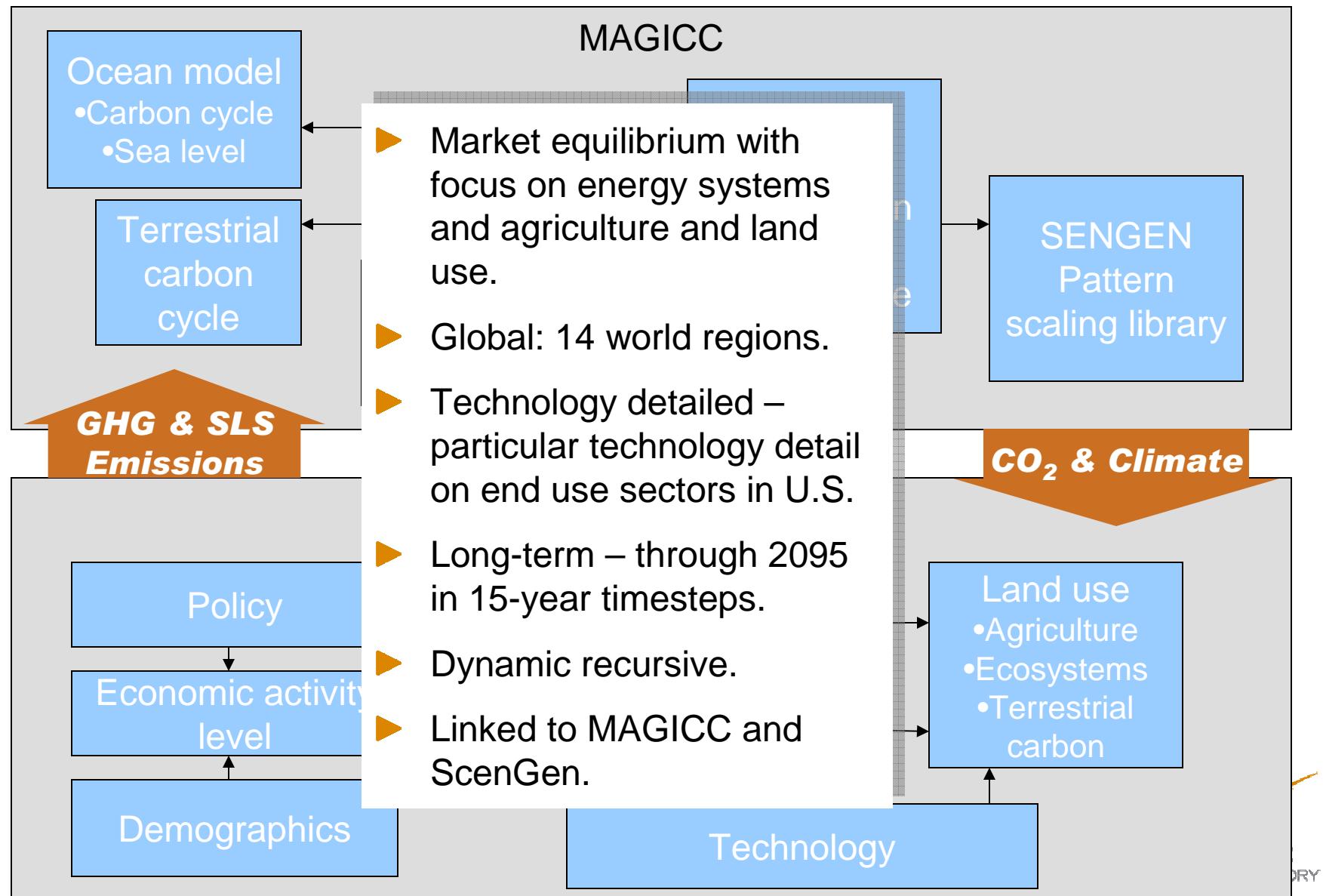
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Assessing Economic Impacts of Greenhouse
Gas Mitigation

October 2, 2008



MiniCAM Integrated Assessment Model



Exploring Technology: Overview of Current CCTP Scenarios



	Reference	Nuclear Reference	Nuclear Advanced	CCS	Bio and CCS	Renewables	End Use	End Use & Renewables	Hydrogen & Supply	Advanced
Transportation: Electric Vehicles	Reference	Reference	Reference	Reference	Reference	Reference	Advanced	Advanced	Reference	Advanced
Transportation: Fuel Cell Vehicles	Reference	Reference	Reference	Reference	Reference	Reference	Advanced	Advanced	Advanced	Advanced
Transportation: Other	Reference	Reference	Reference	Reference	Reference	Reference	Advanced	Advanced	Reference	Advanced
Buildings	Reference	Reference	Reference	Reference	Reference	Reference	Advanced	Advanced	Reference	Advanced
Industry	Reference	Reference	Reference	Reference	Reference	Reference	Advanced	Advanced	Reference	Advanced
Electricity and Hydrogen CCS	No CCS	No CCS	No CCS	Advanced	Advanced	No CCS	No CCS	No CCS	Advanced	Advanced
Dedicated Energy Crops	Reference	Reference	Reference	Reference	Advanced	Advanced	Reference	Advanced	Advanced	Advanced
Hydrogen Production	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Advanced	Advanced
Wind Power	Reference	Reference	Reference	Reference	Reference	Advanced	Reference	Advanced	Advanced	Advanced
Solar Power	Reference	Reference	Reference	Reference	Reference	Advanced	Reference	Advanced	Advanced	Advanced
Nuclear Fission	No New Nuclear	Reference	Advanced	No New Nuclear	Advanced	Advanced				
Geothermal	Reference	Reference	Reference	Reference	Reference	Advanced	Reference	Advanced	Advanced	Advanced

The scenarios are constructed to explore the implications of a wide range of possible combinations of technological advances.

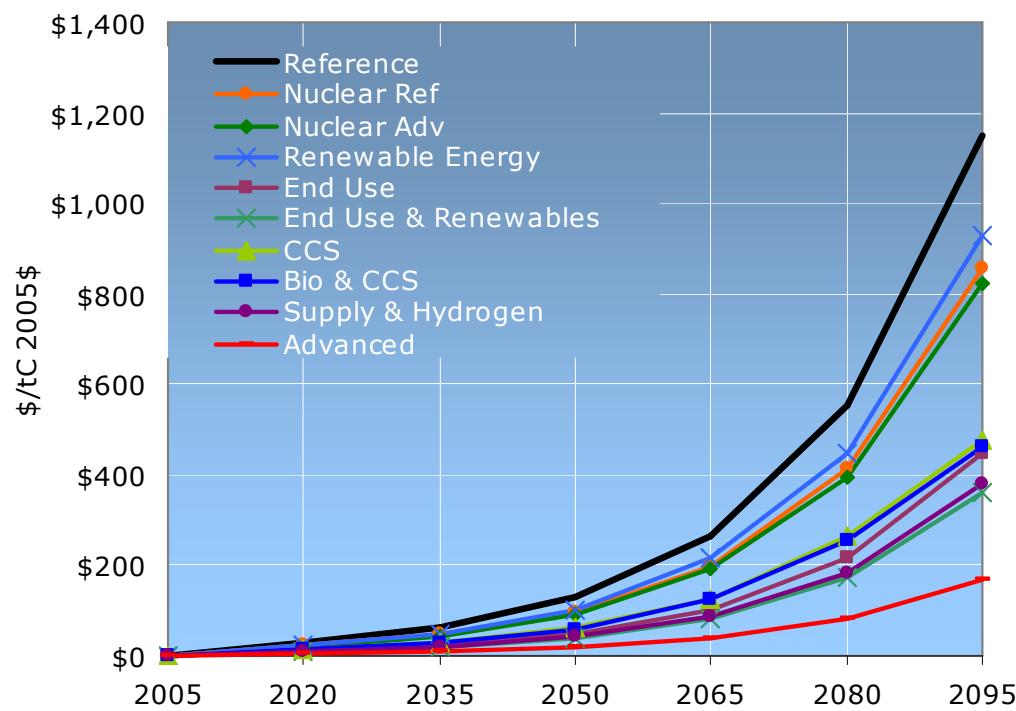


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The Importance of Technology Choice

Varying technology assumptions demonstrates that technology is among the determining factors of mitigation costs.

Uncertainty in costs among models can often be traced to technology assumptions.

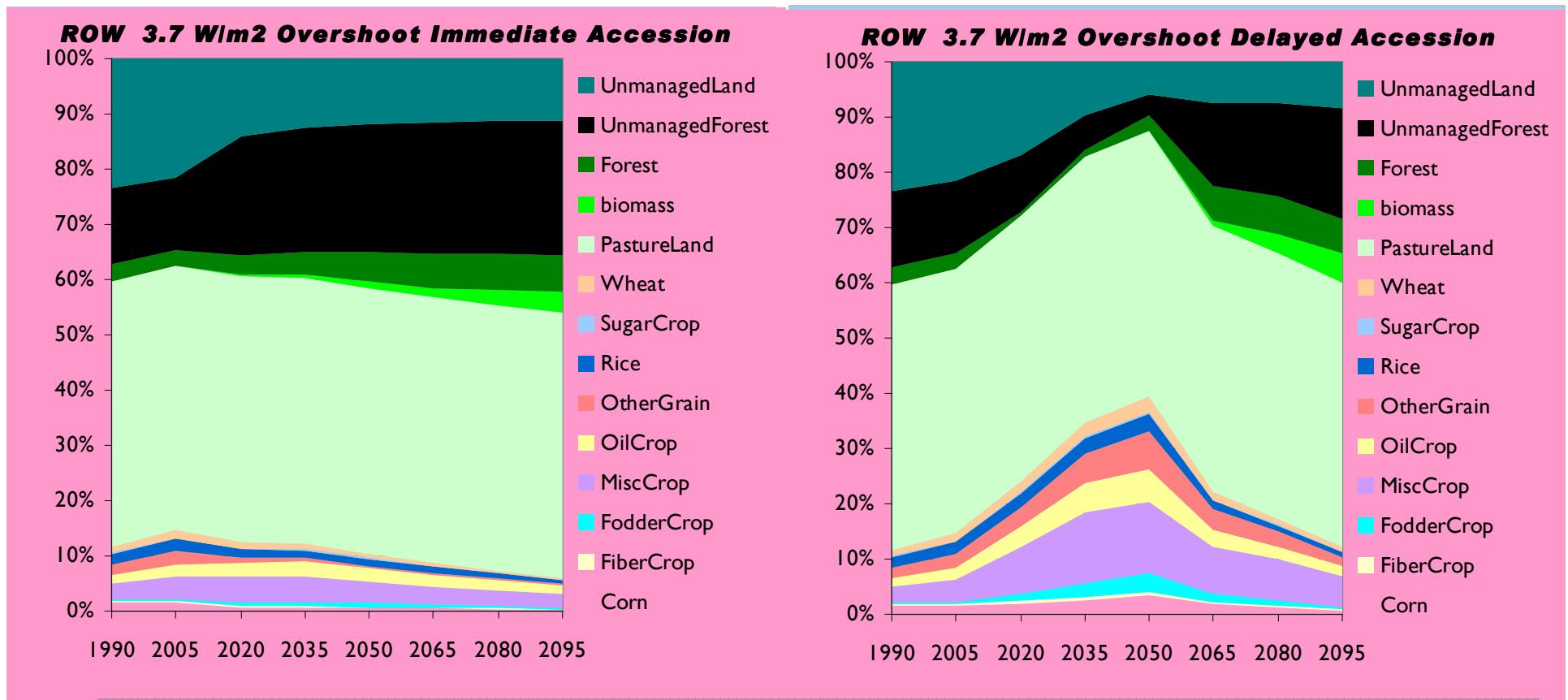


Total Discounted Policy Cost 2005 through 2095		
Reference	0.22	trillion 2005\$
Nuclear Ref	0.16	trillion 2005\$
Nuclear Adv	0.15	trillion 2005\$
Renewable Energy	0.17	trillion 2005\$
End Use	0.04	trillion 2005\$
End Use & Renewables	0.03	trillion 2005\$
CCS	0.10	trillion 2005\$
Bio & CCS	0.10	trillion 2005\$
Supply & Hydrogen	0.05	trillion 2005\$
Advanced	0.01	trillion 2005\$

Note that these costs assume comprehensive international action and allocations of permits among countries so that the U.S. neither buys nor sells permits.

Integrated Assessment Models: Economic Impacts from the Earth-Human System Interaction

Land Use in Three Regions: 550 CO2-e (Kyoto Gases) with Overshoot to 2100



Pricing carbon in land substantially lowers the costs of mitigation.

Limited sectoral coverage can have adverse economic and physical effects

Draft Results